MZ-E80

SERVICE MANUAL

E Model
Tourist Model

Ver 1.0 1999. 07

Photo: Silver

US and foreign patents licensed from Dolby Laboratories Licensing Corporation.

Model Name Using Similar Mechanism	MZ-E55
Mechanism Type	MT-MZE55-150
Optical Pick-Up Name	ODX-1B

SPECIFICATIONS

System

Audio playing system
MiniDisc digital audio system
Laser diode properties
Material: GaAlAs
Wavelength: λ = 790 nm
Emission duration: continuous
Laser output: less than 44.6 μW*
* This output is the value measured at a distance of 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.
Revolutions
800 rpm to 1800 rpm (CLV)
Error correction
Advanced Cross Interleave Reed Solomon Code (ACIRC)
Sampling frequency
44.1 kHz
Coding
Adaptive TRansform Acoustic Coding (ATRAC)
Modulation system
EFM (Eight to Fourteen Modulation)
Number of channels
2 stereo channels
1 monaural channel
Frequency response
20 to 20,000 Hz ± 3 dB
Wow and Flutter
Below measurable limit
Outputs
Headphones: stereo mini-jack, maximum output level 5 mW + 5 mW, load impedance 16 ohms

General

Power requirements
Nickel metal hydride rechargeable battery NH-14WM (supplied)
One LR6 (size AA) battery (not supplied)
Sony AC Power Adaptor AC-E15L [1] (not supplied) connected to the DC IN 1.5 V jack

Battery operation time
You can check the battery condition with the battery indication which is displayed while using the player.

- Battery power decreasing
- Weak batteries. Replace/recharge the batteries
- The batteries have gone out. "LoBATT" flashes in the display of the remote control, and the power goes off.

Battery life*

Batteries	Playback
Ni-MH rechargeable battery (NH-14WM)	Approx. 16 hours**
One LR6 (size AA) alkaline battery	Approx. 22 hours
One LR6 (size AA) alkaline battery and a Ni-MH rechargeable battery (NH-14WM)	Approx. 42 hours**

* The battery life may be shorter depending on operating conditions and the temperature of the location.
** With a fully charged battery

Dimensions
Approx. 81 x 18.7x 83.5 mm (w/h/d)
(3 1/4 x 3/4 x 3 3/8 in.) not including projecting parts and controls
Mass
Approx. 100 g (3.6 oz.) the player only
Approx. 145 g (5.2 oz.) incl. a premastered MD and a nickel metal hydride rechargeable battery NH-14WM
Supplied accessories
Battery Charger (1)
Rechargeable battery (1)
Rechargeable battery carrying case (1)
Headphones with a remote control (1)
Dry battery case (1)
Hand strap (1)
AC Plug Adaptor (1) (Tourist model only)

Design and specifications are subject to change without notice.

PORTABLE MINIDISC PLAYER

MICROFILM

SONY®

TABLE OF CONTENTS

1. SERVICING NOTES 2

2. GENERAL 3

3. DISASSEMBLY 4

4. TEST MODE 6

5. ELECTRICAL ADJUSTMENTS 10

6. DIAGRAMS

6-1. Block Diagram 11
6-2. Printed Wiring Boards 16
6-3. Schematic Diagram 19
6-4. IC Pin Function Description 28

7. EXPLODED VIEWS 35

8. ELECTRICAL PARTS LIST 37

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

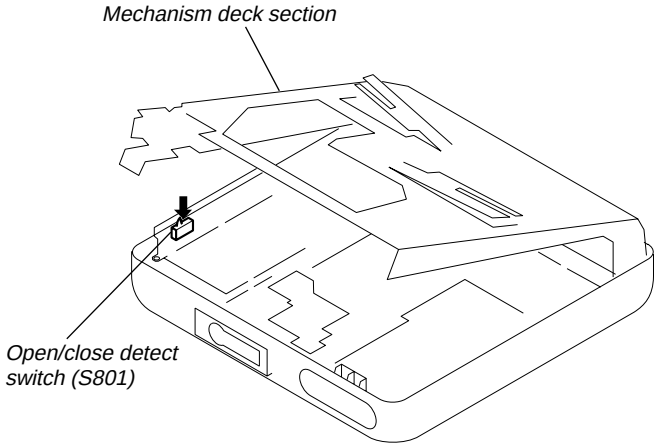
CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This MiniDisc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the bottom exterior.

SECTION 1
SERVICING NOTES

- Removing the mechanism deck causes this set to be disabled during a repair with the power supplied to the set. Therefore, lock convex portion of open/close detect switch (S801) during a repair.



- Replacement of CXD2663GA (IC601) used in this set requires a special tool. Therefore, it cannot be replaced.

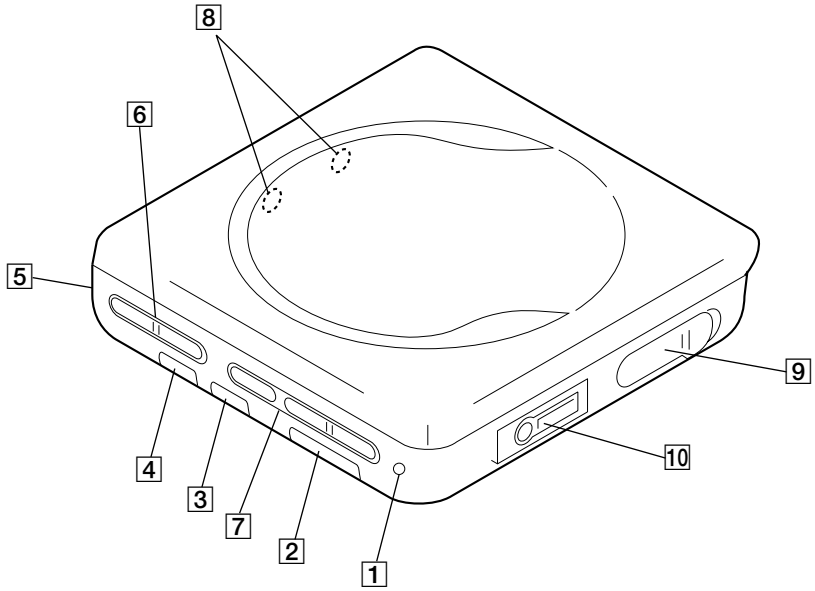
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 2
GENERAL

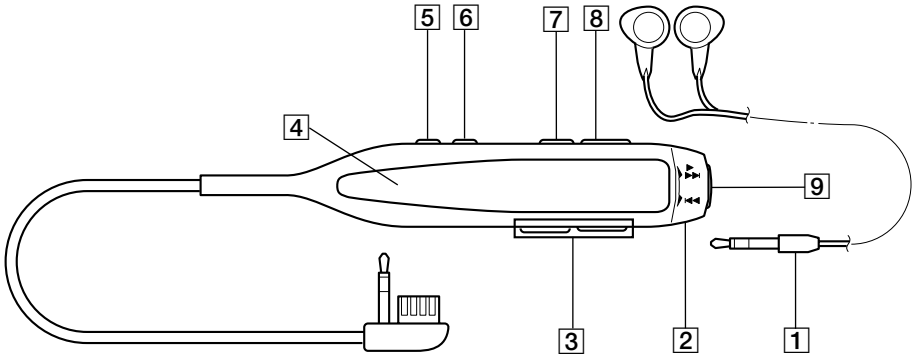
• LOCATION OF CONTROLS

– Main Unit –



1 OPERATE indicator
2 HOLD switch
3 DIGITAL MEGABASS switch
4 AVLS switch
5 Battery cover
6 VOLUME +/– buttons
7 MD operate buttons
▶▶I/▶ (FF • PLAY)
I◀◀ (REW)
■ (STOP)
8 External battery terminal (+/–)
9 OPEN switch
10 ∩ REMOTE jack

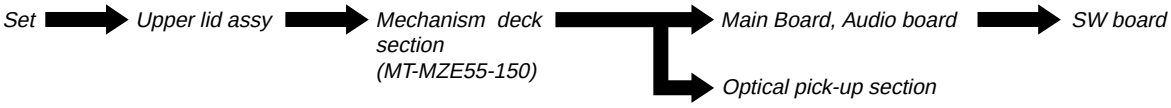
– Remote commander with headphone –



1 Headphone
2 MD operate switch
▶/▶▶I (PLAY • FF)
I◀◀ (REW)
3 VOL +/– buttons
4 Display window
5 DISPLAY button
6 PLAYMODE button
7 ❚❚ (PAUSE) button
8 HOLD ➘ switch
9 ■ (STOP) button

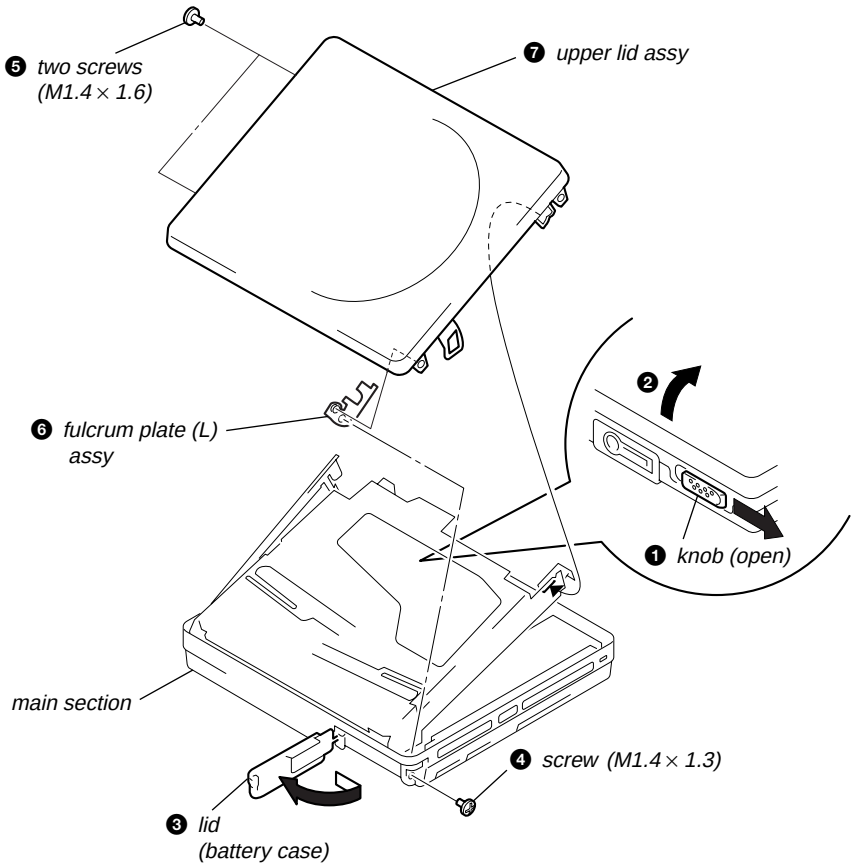
SECTION 3
DISASSEMBLY

• This set can be disassembled in the order shown below.

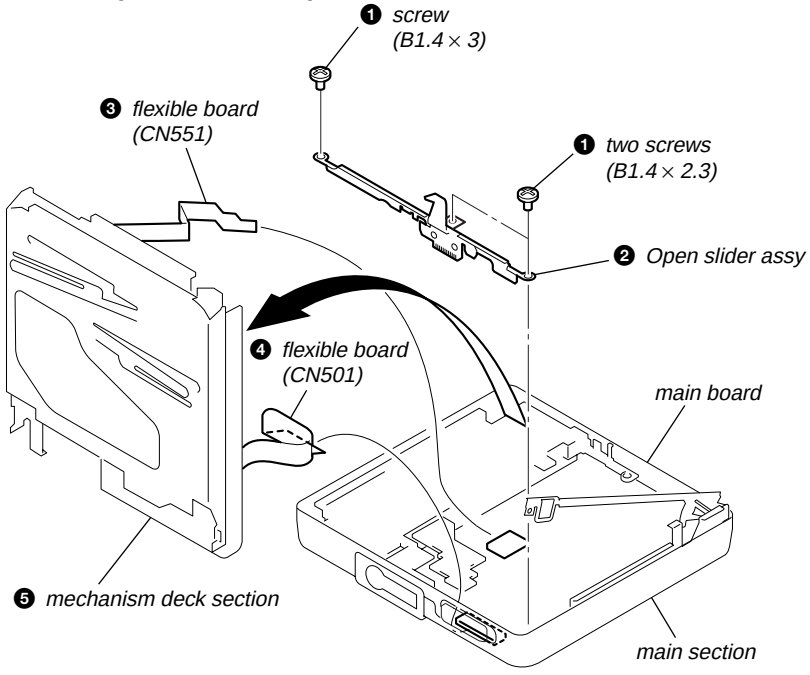


Note: Follow the disassembly procedure in the numerical order given.

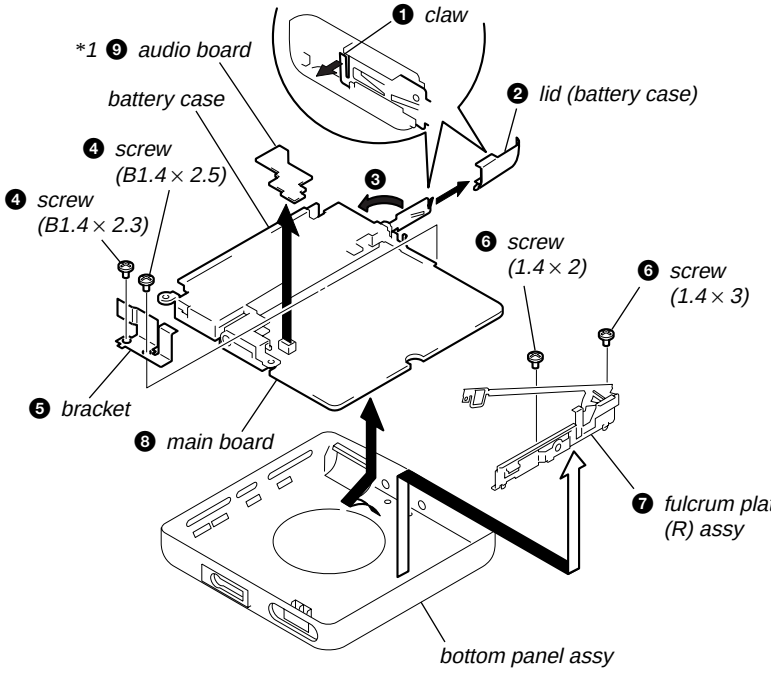
UPPER LID ASSY



MECHANISM DECK SECTION (MT-MZE55-150)

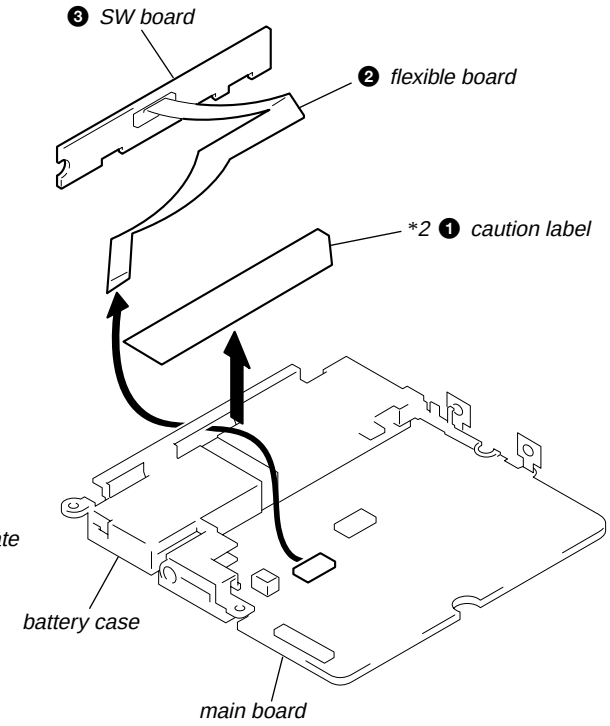


MAIN BOARD, AUDIO BOARD



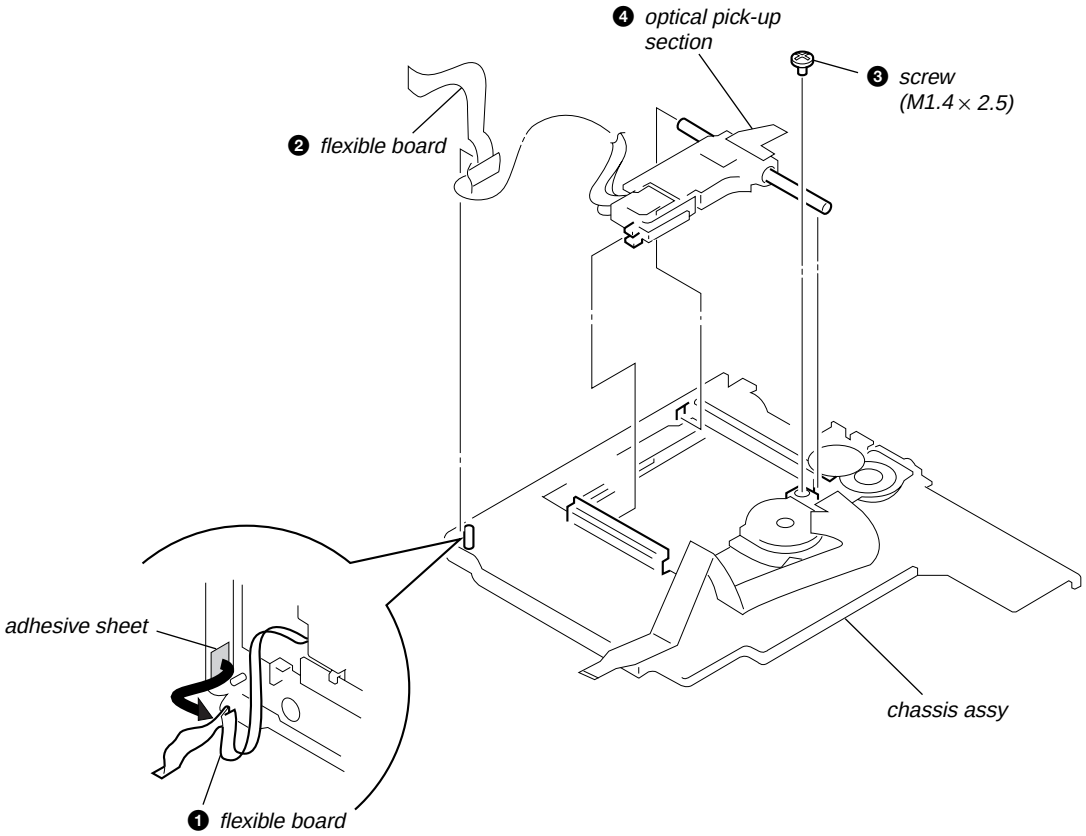
*1 Note: In removing the Audio board, raise the connector section uprightly.

SW BOARD



*2 Note: If the SW board or flexible board is removed, the caution label (4-213-092-01) on the flexible board will be defaced or deformed, and replace it with a new label.

OPTICAL PICK-UP SECTION



SECTION 4
TEST MODE

Outline

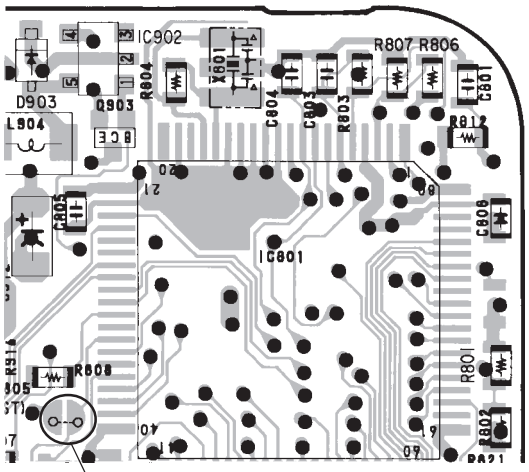
- In this set, overall adjustment mode is made available by entering test mode to perform automatic adjustment of CD and MO. In the overall adjustment mode, the disc is determined whether it is CD or MO and adjustments are performed in sequence. If a fault is found, the location of the fault is displayed. Also, in servo mode, each adjustment can be automatically made.
- Operation in the test mode is performed with the remote commander. A key having no particular description in the text, indicates a remote commander key.

Setting the Test Mode

To enter the test mode, two methods are available :

1. Entering method with key input.
   Turn on the HOLD switch on the set. While pressing the ■ key on the set, press the following remote commander keys in the following order :
   ▶/▶▶I → ▶/▶▶I → I◀◀ → I◀◀ → ▶/▶▶I → I◀◀ → ▶/▶▶I → I◀◀ → II → II
2. Entering method by shorting the test point
   Solder bridge the test point TAP805 (TEST) on the MAIN board (connect IC801 pin ㉝ to GND), and turn on the power.

– MAIN BOARD (Conductor side) –



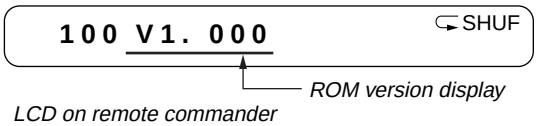
Releasing the Test Mode

A test mode releasing method varies depending on the test mode setting method.

1. When test mode was entered with key input, turn off the power.
2. When test mode was entered by shorting the test point, turn off the power and open the solder bridge of TAP805 (TEST MODE) on the MAIN board.

Operation of Setting on Test Mode

When the test mode is set, the LCD displays the following :

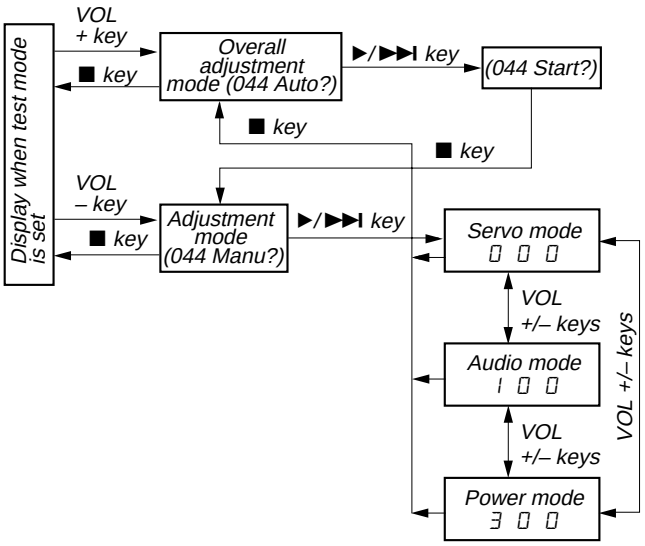


LCD on remote commander

- The cycle - the above ROM version display → All lit → All off - is repeated.
- When the PLAYMODE key is pressed and hold down, the display at that time is held so that display can be checked.

Configuration of Test Mode

The test mode has the configuration given below.

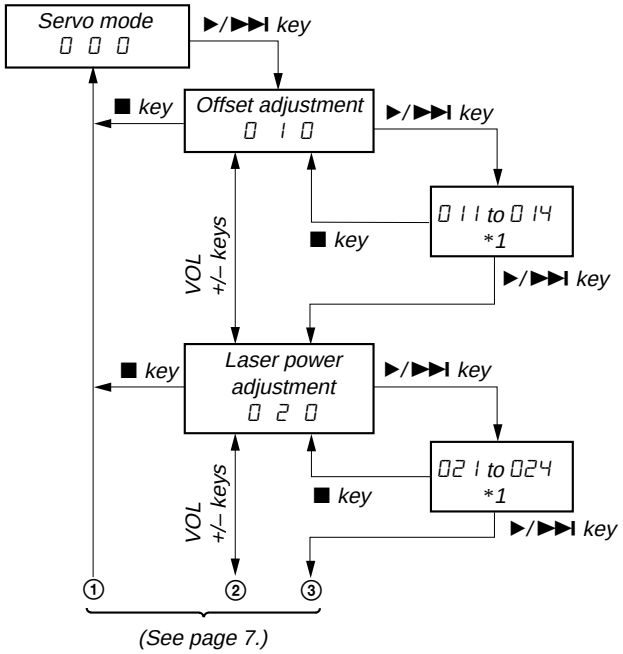


Displays of the LCD on the remote commander are shown in parenthesis.

Servo Mode

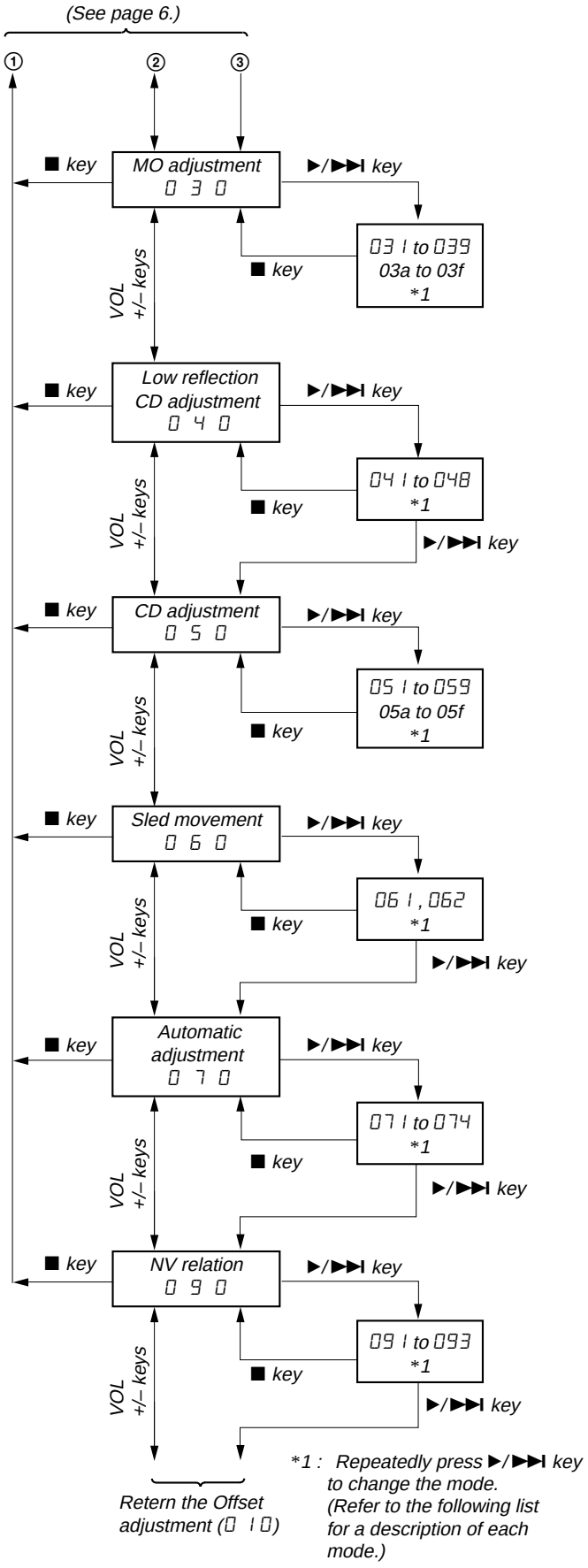
- Set the test mode, press the VOL – key and use the ▶/▶▶I key to set the servo mode.
- When the servo mode is set, use the ▶▶I/▶ key and the I◀◀ key on the set to move the optical pick-up to the outer circumference and to the inner circumference respectively.
- When entering another mode, refer to the configuration of test mode.

1. Structure of Servo Mode



(See page 7.)

**1 Repeatedly press ▶/▶▶I key to change the mode. (Refer to the following list for a description of each mode.)*



2. Description of Each Mode

0 10 Offset adjustment

Mode	Description
011	VC offset, FE offset, ABCD offset
012	Not used
013	Not used
014	Not used

020 Laser power adjustment

Mode	Description
021	MO power (GRV)
022	MO power (LPIT)
023	CD power (HPIT)
024	Not used

030 MO adjustment

Mode	Description
031	MO EF balance
032	MO tracking offset
033	MO ABCD gain
034	MO focus gain
035	MO tracking gain
036	MO focus bias
037	———
038	———
039	———
(03a)	———
(03b)	———
(03c)	———
(03d)	Not used
(03e)	Not used
(03f)	Not used

040 Lower reflection CD adjustment

Mode	Description
041	Lower reflection CD EF balance
042	Lower reflection CD tracking offset
043	Lower reflection CD ABCD gain
044	Lower reflection CD focus gain
045	Lower reflection CD tracking gain
046	Lower reflection CD focus bias
047	———
048	Not used

050 CD adjustment

Mode	Description
051	CD EF balance
052	CD tracking offset
053	CD ABCD gain
054	CD focus gain
055	CD tracking gain
056	CD focus bias
057	———————
058	———————
059	———————
(05a)	———————
(05b)	———————
(05c)	———————
(05d)	Not used
(05e)	Not used
(05f)	Nor used

060 Sled movement

Mode	Description
061	Sled in
062	Sled out

070 Automatic adjustment

Mode	Description
071	Focus search
072	Access 32
073	Not used
074	Not used

090 NV relation

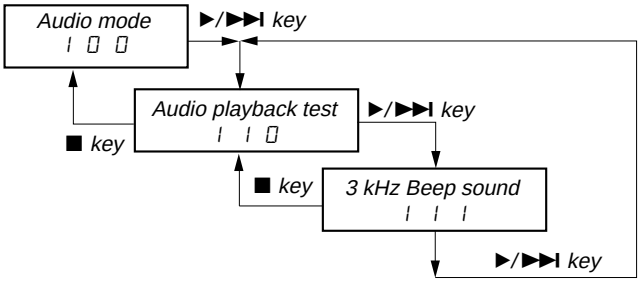
Mode	Description
091	NV clear
092	Power OFF
093	Function code change

Note: The parenthesizal mode numbers in table are not displayed on the LCD of remote commander.

Audio Mode

- Enter the test mode and press the VOL – key. Then, press the ▶/▶▶I key and the VOL + key in this turn to enter audio mode.
- When entering another mode, refer to the configuration of test mode.

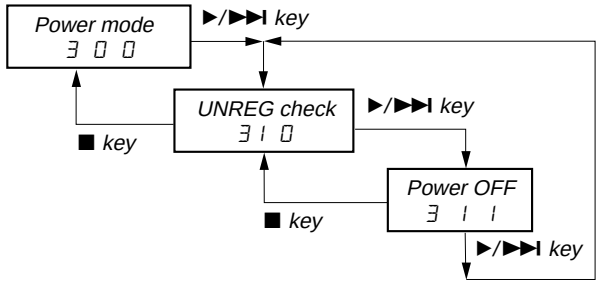
1. Structure of Audio Mode



Power Mode

- Enter the test mode and press the VOL – key. Then, press the ▶/▶▶I key and the VOL – key in this turn to enter power mode.
- When entering another mode, refer to the configuration of test mode.

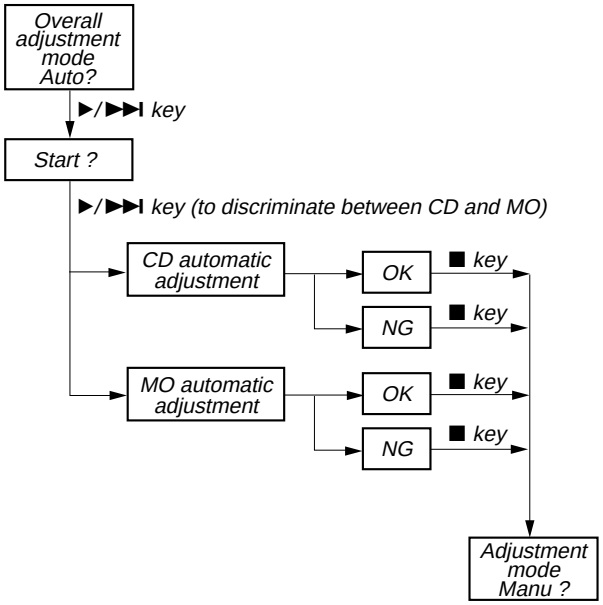
1. Structure of Power Mode



Overall Adjustment Mode

- Enter the test mode and press the VOL + key to enter overall adjustment mode.
- When entering another mode, refer to the configuration of test mode.
- When the overall adjustment mode is entered, the LCD on the remote commander display the following :

1. Structure of Overall Adjustment Mode



SECTION 5
ELECTRICAL ADJUSTMENTS

Notes for Adjustment

- In this set, automatic adjustment of CD and MO can be performed by entering the test mode. (See page 6)
- Adjustments are performed in the overall adjustment mode. If an item is determined as NG, the item is readjusted in servo mode.

Adjustment Method in Overall Adjustment Mode

1. Enter the test mode and press the VOL + key to enter overall adjustment mode.
2. Insert the CD test disc TDYS-1 (Parts No. 4-963-646-01) or SONY MO disc (recorded) commercially available.
3. Press the ►/►►I key. The disc is determined whether it is CD or MO and each adjustment mode is set. Automatic adjustments are performed in the order of the items listed below.

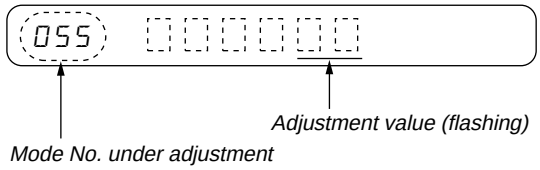
• In CD Automatic adjustment Mode

No.	Mode	Description
1	061	Sled in
2	062	Sled out
3	071	Focus search
4	051	CD EF balance
5	053	CD ABCD gain
6	051	CD EF balance
7	052	CD tracking offset
8	054	CD focus gain
9	055	CD tracking gain
10	056	CD focus bias

• In MO Automatic adjustment Mode

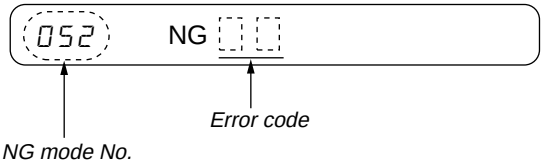
No.	Mode	Description
1	061	Sled in
2	062	Sled out
3	071	Focus search
4	031	MO EF balance
5	033	MO ABCD gain
6	031	MO EF balance
7	032	MO tracking offset
8	034	MO focus gain
9	035	MO tracking gain
10	036	MO focus bias

* Remote commander display during automatic adjustment



4. If result of automatic adjustment is OK, the following display appears.

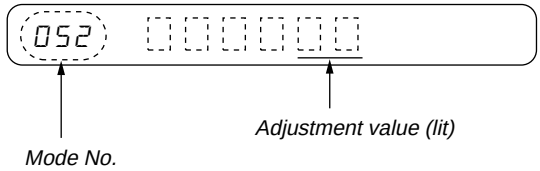
5. If result of automatic adjustment is NG, the following display appears.



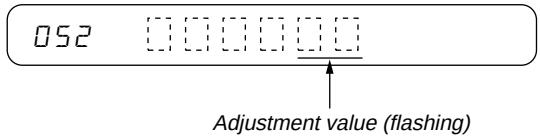
* If NG, enter servo mode to perform automatic adjustment of the item determined as NG.

Adjustment in Servo Mode Method

1. When each adjustment mode is set according to the structure of servo mode, the lower two digits of the mode No. and the adjustment value written in EEPROM are displayed and lit on the LCD on the remote commander. (See page 6)

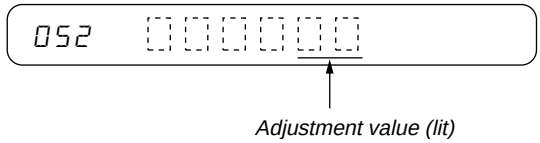


2. When the ❚❚ key is pressed, the following display appears and the automatic adjustment is performed.



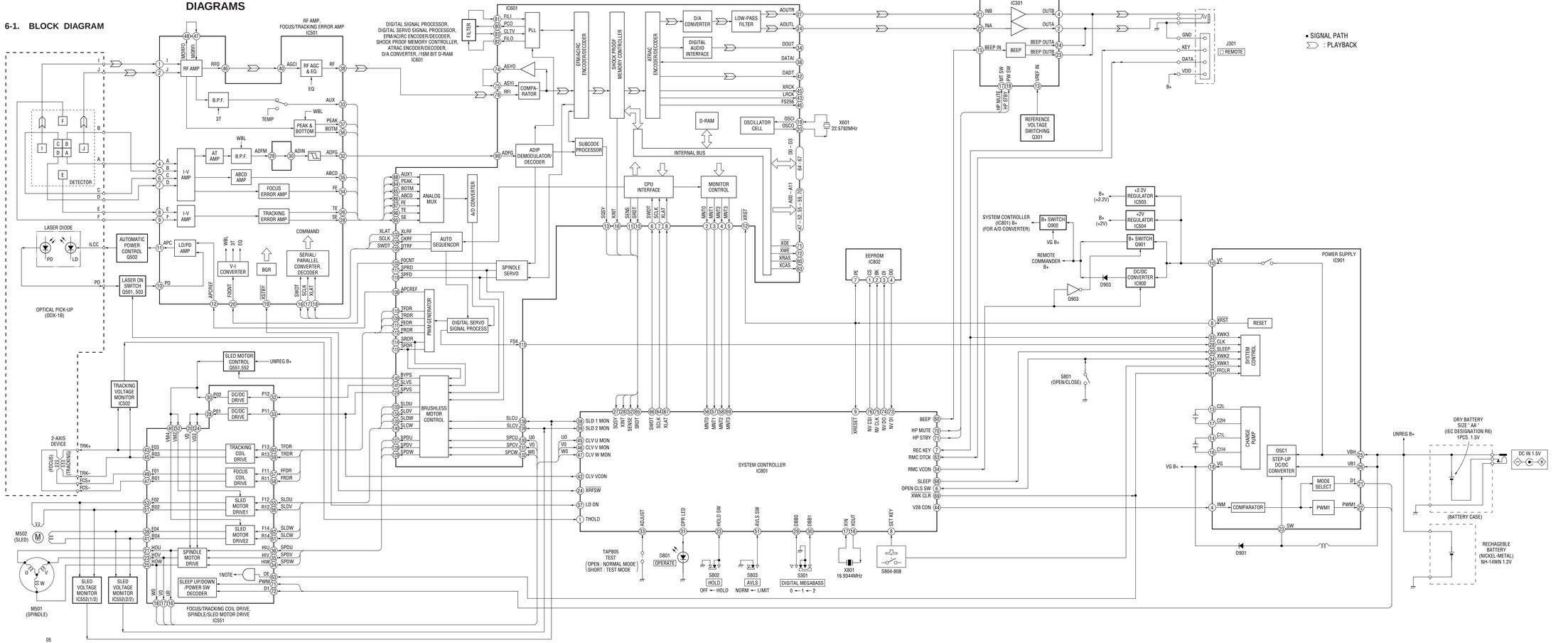
Note: Although the VOL +/– keys can be used to change the adjustment value to any value, they should not be used whenever possible.

3. When the automatic adjustment is completed, the flashing adjustment value is lit.



SECTION 6
DIAGRAMS

6-1. BLOCK DIAGRAM



6-2. PRINTED WIRING BOARDS

Note on Printed Wiring Boards:

- ——— : parts extracted from the conductor side.
- ● : Through hole.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

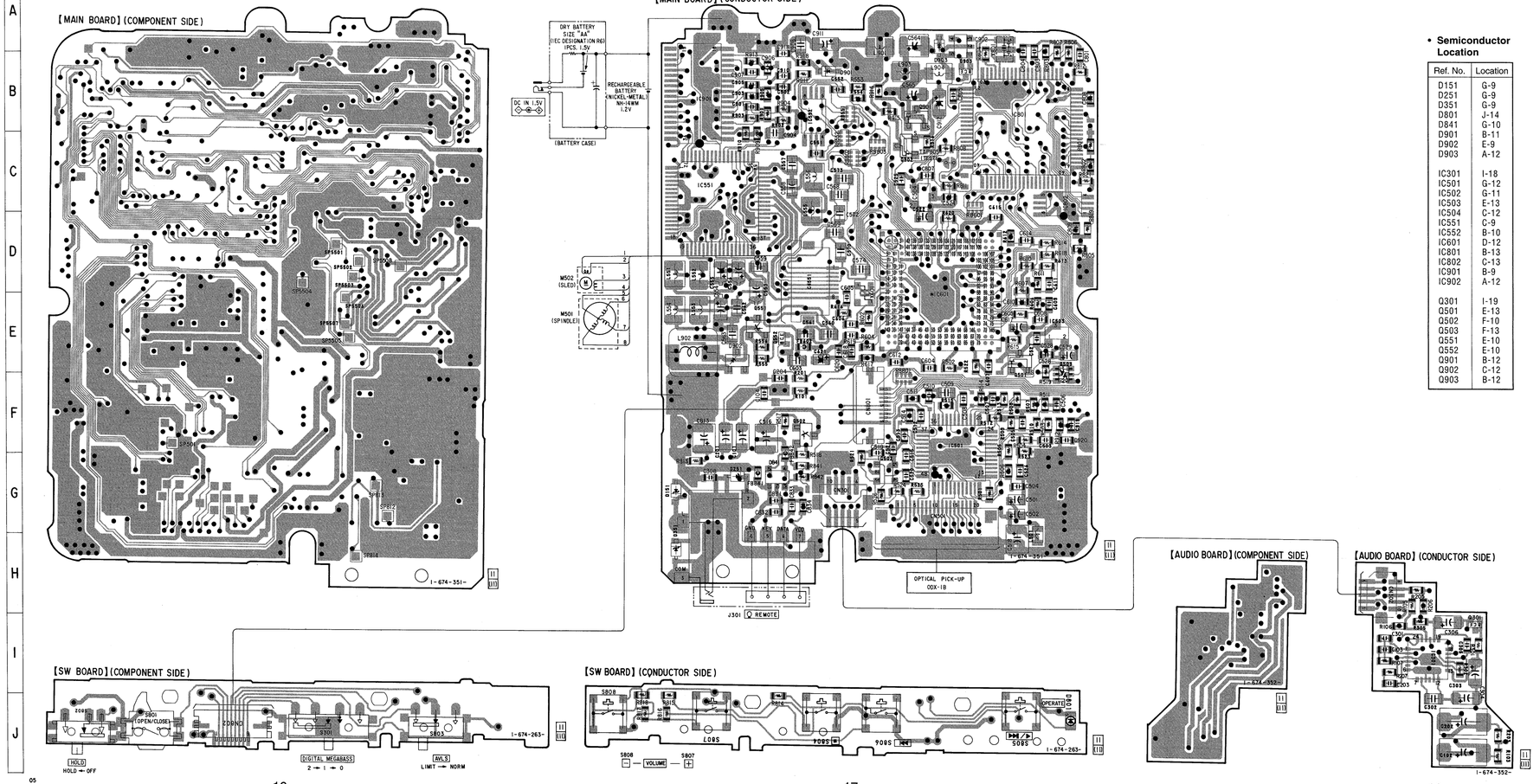
- Main board is four-layer printed board. However, the patterns of layers 2 and 3 have not been included in this diagrams.

✻ IC601 is not replaceable

- Lead Layouts

Lead layout of conventional IC

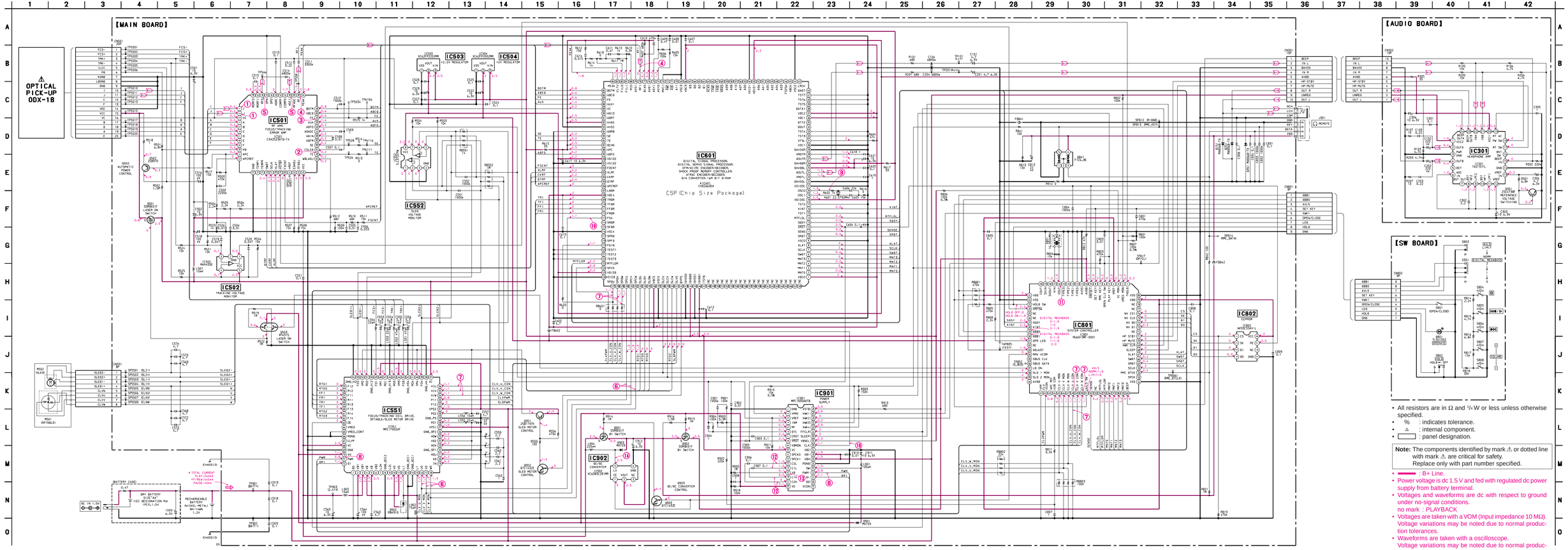
CSP (chip size package)



- **Semiconductor Location**

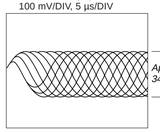
Ref. No.	Location
D151	G-9
D251	G-9
D351	G-9
D801	J-14
D841	G-10
D901	B-11
D902	E-9
D903	A-12
IC301	I-18
IC501	G-12
IC502	G-11
IC503	E-13
IC504	C-12
IC551	C-9
IC552	B-10
IC601	D-12
IC801	B-13
IC802	C-13
IC901	B-9
IC902	A-12
Q301	I-19
Q501	E-13
Q502	F-10
Q503	F-13
Q551	E-10
Q552	E-10
Q901	B-12
Q902	C-12
Q903	B-12

05

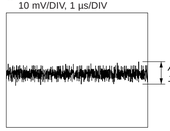

【MAIN BOARD】
【AUDIO BOARD】
【SW BOARD】
OPTICAL PICK-UP ODX-1B
IC501
IC502
IC503
IC504
IC551
IC552
IC601
IC801
IC802
IC901
IC902
IC301
CSP (Chip Size Package)
DIGITAL SIGNAL PROCESSOR, DIGITAL SERVO SIGNAL PROCESSOR, SHOCK PROOF MEMORY CONTROLLER, ATRAC ENCODER/DECODER, 6-ch CONVERTER, 1-ch BIT D-RAM
DIGITAL MEGA BASS
SYSTEM CONTROLLER
ELMINA
POWER SUPPLY
DC/DC CONVERTER
DC/DC CONVERTER CONTROL
SLED MOTOR CONTROL
SPINDLE/SLED MOTOR DRIVE
FOCUS/TRACKING COIL DRIVE, SPINDLE/SLED MOTOR DRIVE
FOCUS/TRACKING ERROR AMP
AUDIO MUTE
HEADPHONE AMP
VOLTAGE SWITCH
REFERENCE VOLTAGE
OPEN/CLOSE
LED
HOLD
AUTOMATIC POWER CONTROL
LASER ON SWITCH
TRACKING VOLTAGE MONITOR
OPR BATTERY
RECHARGEABLE BATTERY
DC IN 1.5V
BATTERY CASE
BEEP
REMOTE
DIGITAL
ANALOG
SPDIF
OPTICAL
COAXIAL
DIGITAL OUT
OPTICAL OUT
COAXIAL OUT
LINE OUT
HEADPHONE
REMOTE
EEPROM
SYSTEM CONTROLLER
RU4A0001-0001
MCM63A685B
CXD2662R
CXA2523AR-T4
CXA2523AR
CXA2523AR
CXA2523AR

• Waveforms
– MAIN Board –

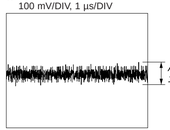
❶ IC501 ①, ② (I,J)
100 mV/DIV, 5 µs/DIV



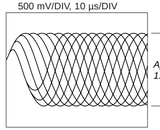
❷ IC501 ㊳ (TE)
10 mV/DIV, 1 µs/DIV



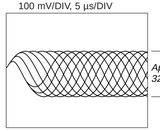
❸ IC501 ㉞ (FE)
100 mV/DIV, 1 µs/DIV



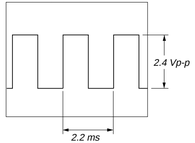
❹ IC501 ㊱ (RF), IC601 ㊽ (RF1)
500 mV/DIV, 10 µs/DIV



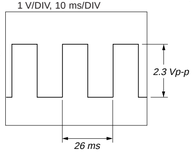
❺ IC501 ㊷, ㊹ (AGCI, RFO)
100 mV/DIV, 5 µs/DIV



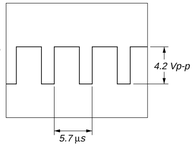
❻ IC551 ⑯, ⑰, ⑱ (U0, V0, W0)
IC601 ⑬, ⑭, ⑮ (SPCU, SPCV, SPCW)
1 V/DIV, 10 ms/DIV



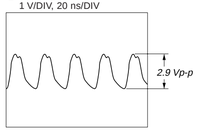
❼ IC551 ㉔, ㉕, ㉖ (HIW, HIV, HIU)
IC601 ⑩, ⑪, ⑫ (SPDU, SPDV, SPDW)
IC801 ㉖, ㉗, ㉘
(CLV U CON, CLV V CON, CLV W CON)
1 V/DIV, 10 ms/DIV



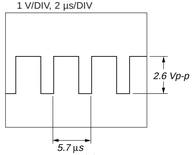
❽ IC551 ⑰ (PWM), IC901 ㉒ (PWM1)
2 V/DIV, 2 µs/DIV



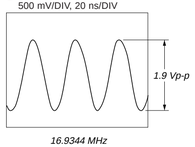
❾ IC601 ㉒ (OSCO)
1 V/DIV, 20 ns/DIV



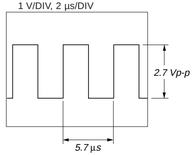
❿ IC601 ⑪ (FS4), IC901 ㉘ (CLK)
1 V/DIV, 2 µs/DIV



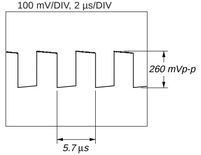
⓫ IC801 ⑯ (XOUT)
500 mV/DIV, 20 ns/DIV



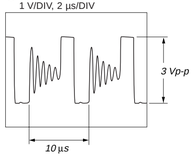
⓬ IC901 ⑬, ⑭, ⑯, ⑰
(C2L, C1L, C1H, C2H)
1 V/DIV, 2 µs/DIV



⓭ IC901 ⑬ (VB)
100 mV/DIV, 2 µs/DIV

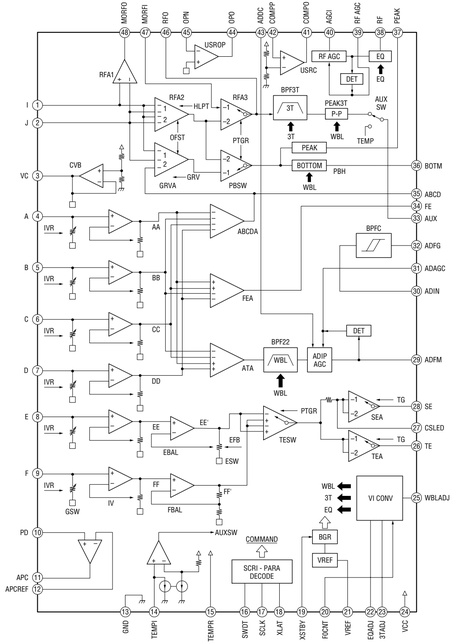


⓮ IC902 ② (LX)
1 V/DIV, 2 µs/DIV

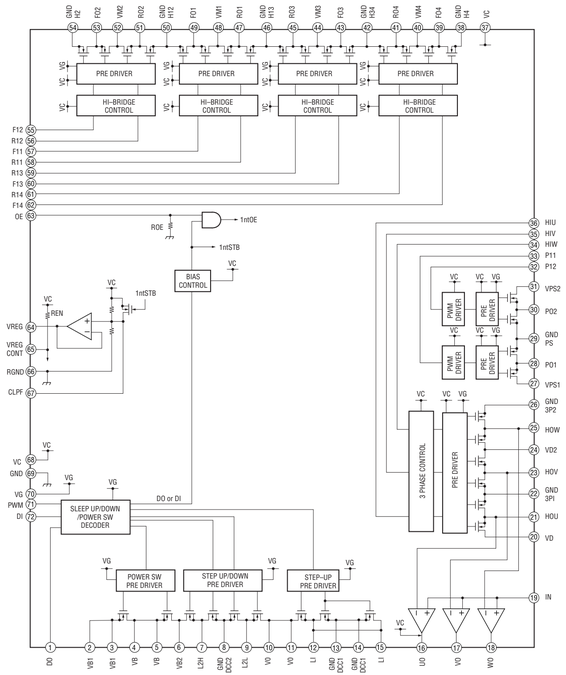


• IC Block Diagrams
– MAIN Board –

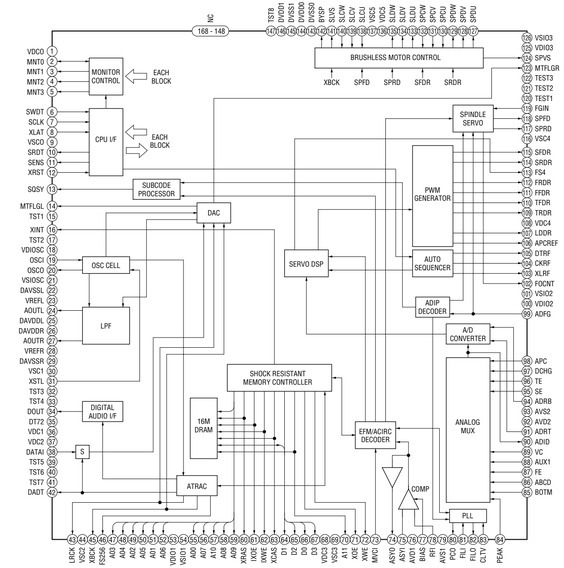
IC501 CXA2523ATQ-T4



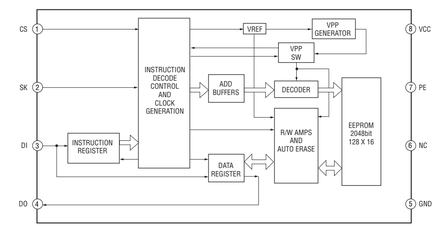
IC551 MPC17A55FTA



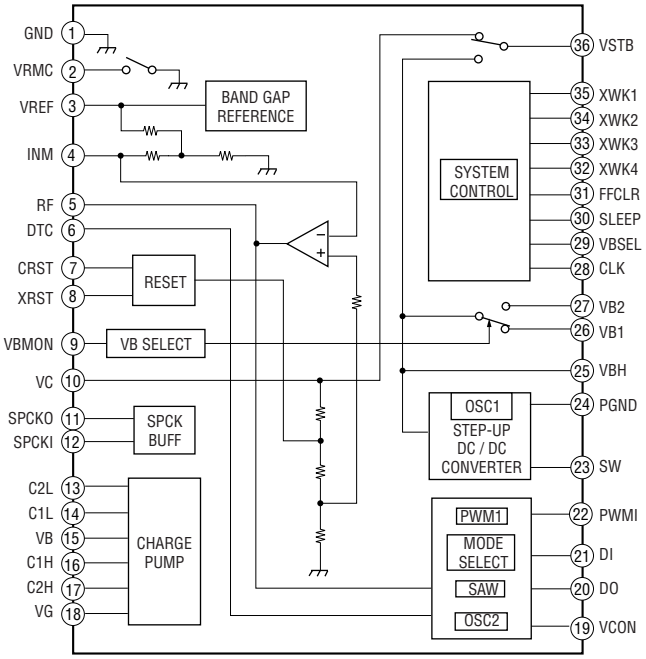
IC601 CXD2663GA



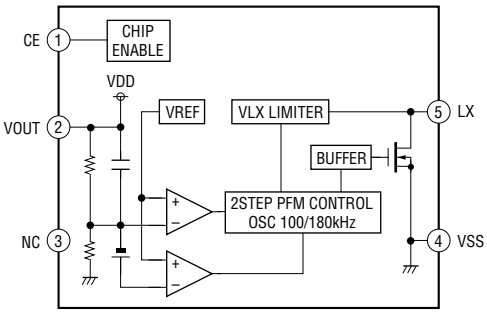
IC802 AK93C55AV-L



IC901 MPC1830ADTB

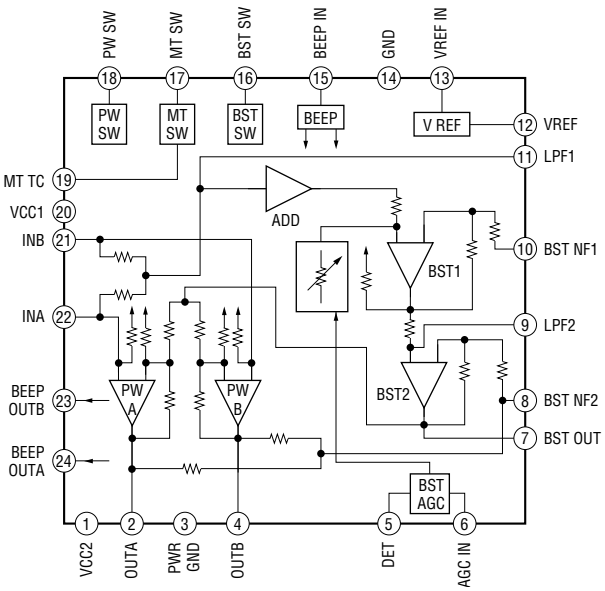


IC902 XC6383C281MR



– AUDIO Board –

IC301 TA2131FL (EL)



6-4. IC PIN FUNCTION DESCRIPTION

• MAIN BOARD IC501 CXA2523ATQ-T4 (RF AMP, FOCUS/TRACKING ERROR AMP)

Pin No.	Pin Name	I/O	Description
1	I	I	I-V converted RF signal I input from the optical pick-up block detector
2	J	I	I-V converted RF signal J input from the optical pick-up block detector
3	VC	O	Middle point voltage (+1.2V) generation output terminal
4 to 9	A to F	I	Signal input from the optical pick-up detector (A to F)
10	PD	I	Light amount monitor input from the optical pick-up block laser diode
11	APC	O	Laser amplifier output terminal to the automatic power control circuit
12	APCREF	I	Reference voltage input terminal for setting laser power
13	GND	—	Ground terminal
14	TEMPI	I	Connected to the temperature sensor Not used (open)
15	TEMPR	O	Output terminal for a temperature sensor reference voltage Not used (open)
16	SWDT	I	Writing data input from the CXD2663GA (IC601)
17	SCLK	I	Serial clock signal input from the CXD2663GA (IC601)
18	XLAT	I	Serial latch signal input from the CXD2663GA (IC601)
19	$\overline{\text{XSTBY}}$	I	Standby control signal input from the system controller (IC801) "L": standby
20	F0CNT	I	Center frequency control signal input terminal of internal circuit (BPF22, BPF3T, EQ) input from the CXD2663GA (IC601)
21	VREF	O	Reference voltage output terminal Not used (open)
22	EQADJ	I	Center frequency setting terminal for the internal circuit (EQ)
23	3TADJ	I	Center frequency setting terminal for the internal circuit (BPF3T)
24	VCC	—	Power supply terminal (+2.4V)
25	WBLADJ	I	Center frequency setting terminal for the internal circuit (BPF22)
26	TE	O	Tracking error signal output to the CXD2663GA (IC601)
27	CSLED	I	Connected to the capacitor for low-pass filter of the sled error signal
28	SE	O	Sled error signal output to the CXD2663GA (IC601)
29	ADFM	O	FM signal output terminal of the ADIP
30	ADIN	I	Receives a ADIP FM signal in AC coupling
31	ADAGC	I	Connected to the external capacitor for ADIP AGC
32	ADFG	O	ADIP duplex FM signal (22.05 kHz ± 1 kHz) output to the CXD2663GA (IC601)
33	AUX	O	Auxiliary signal (I_3 signal/temperature signal) output to the CXD2663GA (IC601)
34	FE	O	Focus error signal output to the CXD2663GA (IC601)
35	ABCD	O	Light amount signal output to the CXD2663GA (IC601)
36	BOTM	O	Light amount signal (RF/ABCD) bottom hold output to the CXD2663GA (IC601)
37	PEAK	O	Light amount signal (RF/ABCD) peak hold output to the CXD2663GA (IC601)
38	RF	O	Playback EFM RF signal output to the CXD2663GA (IC601)
39	RFAGC	I	Connected to the external capacitor for RF auto gain control circuit
40	AGCI	I	Receives a RF signal in AC coupling
41	COMPO	O	User comparator output terminal Not used (open)
42	COMPP	I	User comparator input terminal Not used (fixed at "L")
43	ADDC	I	Connected to the external capacitor for cutting the low band of the ADIP amplifier
44	OPO	O	User operational amplifier output terminal Not used (open)
45	OPN	I	User operational amplifier inversion input terminal Not used (fixed at "L")
46	RFO	O	RF signal output terminal
47	MORFI	I	Receives a MO RF signal in AC coupling
48	MORFO	O	MO RF signal output terminal

• **MAIN BOARD IC601 CXD2663GA**
(DIGITAL SIGNAL PROCESSOR, DIGITAL SERVO SIGNAL PROCESSOR, EFM/ACIRC ENCODER/DECODER, SHOCK PROOF MEMORY CONTROLLER, ATRAC ENCODER/DECODER, D/A CONVERTER, 16M BIT D-RAM)

Pin No.	Pin Name	I/O	Description
1	VDCO	—	Power supply terminal (+2V) (for internal logic)
2	MNT0	O	Signal indicating the speed follow-up spinning mode output to the system controller (IC801) "H": speed follow-up spinning mode
3	MNT1	O	Sled motor operation monitor signal output to the system controller (IC801) "H": monitor drive
4	MNT2	O	Speed limiter signal output to the system controller (IC801) "L": limiter on
5	MNT3	O	Window signal to detect an inverse trigger edge output to the system controller (IC801) "H": edge detectable
6	SWDT	I	Writing data input from the system controller (IC801)
7	SCLK	I	Serial clock signal input from the system controller (IC801)
8	XLAT	I	Serial data latch pulse input from the system controller (IC801)
9	VSCO	—	Ground terminal (for internal logic)
10	SRDT	O	Reading data output to the system controller (IC801)
11	SENS	O	Internal status (SENSE) output to the system controller (IC801)
12	$\overline{\text{XRST}}$	I	System reset signal input from the MPC1830ADTB (IC901) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
13	SQSY	O	Subcode Q sync (SCOR) output the system controller (IC801) "L": is output every 13.3 msec Almost all, "H" is output
14	MTFLGL	O	Muting applied to analog signal input in non-signal status causes the signal to be "H" automatically Not used
15	TST1	I	Input terminal for the test (fixed at "L")
16	XINT	O	Interrupt status output to the system controller (IC801)
17	TST2	I	Input terminal for the test (fixed at "L")
18	VDIOSC	—	Power supply terminal (+2.4V) (for oscillator cell)
19	OSCI	I	System clock (512Fs=22.5792 MHz) input terminal
20	OSCO	O	System clock (512Fs=22.5792 MHz) output terminal
21	VSIOSC	—	Ground terminal (for oscillator cell)
22	DAVSSL	—	Ground terminal (for internal D/A converter L-ch)
23	VREFL	O	Reference voltage output terminal (for internal D/A converter L-ch)
24	AOUTL	O	Playback analog signal (L) output to the headphone amplifier (IC301)
25	DAVDDL	—	Power supply terminal (+2.4V) (for internal D/A converter L-ch)
26	DAVDDR	—	Power supply terminal (+2.4V) (for internal D/A converter R-ch)
27	AOUTR	O	Playback analog signal (R) output to the headphone amplifier (IC301)
28	VREFR	O	Reference voltage output terminal (for internal D/A converter R-ch)
29	DAVSSR	—	Ground terminal (for internal D/A converter R-ch)
30	VSC1	—	Ground terminal (for internal logic)
31	XTSL	I	Input terminal for the system clock frequency setting "L": 45.1584 MHz, "H": 22.5792 MHz (fixed at "H" in this set)
32, 33	TST3, TST4	I	Input terminal for the test (normally : fixed at "L")
34	DOUT	O	Digital audio signal output terminal when playback mode Not used (open)
35	DT72	O	Not used (open)
36, 37	VDC1, VDC2	—	Power supply terminal (+2V) (for internal logic)
38	DATAI	I	Input terminal of external audio data to the internal D/A converter Not used (open)
39 to 41	TST5 to TST7	I	Input terminal for the test (normally : fixed at "L")
42	DADT	O	Playback data signal output to the external D/A converter Not used (open)

Pin No.	Pin Name	I/O	Description
43	LRCK	O	L/R sampling clock signal (44.1 kHz) output to the external D/A converter Not used (open)
44	VSC2	—	Ground terminal (for internal logic)
45	XBCK	O	Bit clock signal (2.8224 MHz) output to the external D/A converter Not used (open)
46	FS256	O	Clock signal (11.2896 MHz) output to the external D/A converter Not used (open)
47 to 52	A03, A04, A02, A05, A01, A06	O	Address signal output to the external D-RAM Not used (open)
53	VDIO1	—	Power supply terminal (+2.2V) (for I/O cell)
54	VSIO1	—	Ground terminal (for I/O cell)
55 to 59	A00, A07, A10, A08, A09	O	Address signal output to the external D-RAM Not used (open)
60	$\overline{\text{XRAS}}$	O	Row address strobe signal output to the external D-RAM "L" active Not used (open)
61	$\overline{\text{IXOE}}$	O	Output enable signal output terminal "L" active Not used (open)
62	$\overline{\text{IXWE}}$	O	Data write enable signal output terminal "L" active Not used (open)
63	$\overline{\text{XCAS}}$	O	Column address strobe signal output to the external D-RAM "L" active Not used (open)
64 to 67	D1, D2, D0, D3	I/O	Two-way data bus with the external D-RAM Not used (open)
68	VDC3	—	Power supply terminal (+2V) (for internal logic)
69	VSC3	—	Ground terminal (for internal logic)
70	A11	O	Address signal output to the external D-RAM Not used (open)
71	$\overline{\text{XOE}}$	O	Output enable signal output to the external D-RAM "L" active Not used (open)
72	$\overline{\text{XWE}}$	O	Data write enable signal output to the external D-RAM "L" active Not used (open)
73	MVCI	I	Digital in PLL oscillation input from the external VCO Not used (fixed at "L")
74	ASYO	O	Playback EFM full-swing output terminal
75	ASYI	I	Playback EFM asymmetry comparator voltage input terminal
76	AVD1	—	Power supply terminal (+2.4V) (analog system)
77	BIAS	I	Playback EFM asymmetry circuit constant current input terminal
78	RFI	I	Playback EFM RF signal input from the CXA2523ATQ (IC501)
79	AVS1	—	Ground terminal (analog system)
80	PCO	O	Phase comparison output for master clock of the recording/playback FEM master PLL
81	FILI	I	Filter input for master clock of the recording/playback EFM master PLL
82	FILO	O	Filter output for master clock of the recording/playback EFM master PLL
83	CLTV	I	Internal VCO control voltage input of the recording/playback EFM master PLL
84	PEAK	I	Light amount signal (RF/ABCD) peak hold input from the CXA2523ATQ (IC501)
85	BOTM	I	Light amount signal (RF/ABCD) bottom hold input from the CXA2523ATQ (IC501)
86	ABCD	I	Light amount signal input from the CXA2523ATQ (IC501)
87	FE	I	Focus error signal input from the CXA2523ATQ (IC501)
88	AUX1	I	Auxiliary signal (I_3 signal/temperature signal) input from the CXA2523ATQ (IC501)
89	VC	I	Middle point voltage (+1.2V) input terminal
90	ADIO	O	Monitor output of the A/D converter input signal Not used (open)
91	ADRT	I	A/D converter operational range upper limit voltage input terminal (fixed at "H" in this set)
92	AVD2	—	Power supply terminal (+2.4V) (analog system)
93	AVS2	—	Ground terminal (analog system)
94	ADRB	I	A/D converter operational range lower limit voltage input terminal (fixed at "L" in this set)
95	SE	I	Sled error signal input from the CXA2523ATQ (IC501)
96	TE	I	Tracking error signal input from the CXA2523ATQ (IC501)
97	DCHG	I	Connected to the +2.4V power supply
98	APC	I	Error signal input for the laser automatic power control Not used (fixed at "H")

Pin No.	Pin Name	I/O	Description
99	ADFG	I	ADIP duplex FM signal (22.05 kHz ± 1 kHz) input from the CXA2523ATQ (IC501)
100	VDIO2	—	Power supply terminal (+2.2V) (for I/O cell)
101	VSIO2	—	Ground terminal (for I/O cell)
102	F0CNT	O	Center frequency control signal output terminal of internal circuit (BPF22, BPF3T, EQ) output to the CXA2523ATQ (IC501)
103	XLRF	O	Serial latch signal output to the CXA2523ATQ (IC501)
104	CKRF	O	Serial clock signal output to the CXA2523ATQ (IC501)
105	DTRF	O	Writing data output to the CXA2523ATQ (IC501)
106	APCREF	O	Control signal output to the reference voltage generator circuit for the laser automatic power control
107	LDDR	O	PWM signal output for the laser automatic power control Not used (open)
108	VDC4	—	Power supply terminal (+2V) (for internal logic)
109	TRDR	O	Tracking servo drive PWM signal (–) output to the MPC17A55VF (IC551)
110	TFDR	O	Tracking servo drive PWM signal (+) output to the MPC17A55VF (IC551)
111	FFDR	O	Focus servo drive PWM signal (+) output to the MPC17A55VF (IC551)
112	FRDR	O	Focus servo drive PWM signal (–) output to the MPC17A55VF (IC551)
113	FS4	O	Clock signal (176.4 kHz) output to the MPC1830ADTB (IC901) (X' tal system)
114	SRDR	O	Sled servo drive PWM signal (–) output terminal Not used (open)
115	SFDR	O	Sled servo drive PWM signal (+) output terminal Not used (open)
116	VSC4	—	Ground terminal (for internal logic)
117	SPRD	O	Spindle servo drive PWM signal (–) output terminal Not used (open)
118	SPFD	O	Spindle servo drive PWM signal (+) output terminal Not used (open)
119	FGIN	I	FG signal input terminal for spindle servo
120 to 122	TEST1 to TEST3	I	Input terminal for the test (normally : fixed at “L”)
123	MTFLGR	O	Muting applied to analog signal input in non-signal status causes the signal to be “H” automatically Not used
124	SPVS	O	Spindle servo drive voltage control signal output to the MPC17A55VF (IC551)
125	VDI03	—	Power supply terminal (+2.2V) (for I/O cell)
126	VSI03	—	Ground terminal (for I/O cell)
127	SPDU	O	Spindle servo (U) drive signal output to the MPC17A55VF (IC551)
128	SPDV	O	Spindle servo (V) drive signal output to the MPC17A55VF (IC551)
129	SPDW	O	Spindle servo (W) drive signal output to the MPC17A55VF (IC551)
130	SPCU	I	Spindle servo (U) timing signal input from the MPC17A55VF (IC551)
131	SPCV	I	Spindle servo (V) timing signal input from the MPC17A55VF (IC551)
132	SPCW	I	Spindle servo (W) timing signal input from the MPC17A55VF (IC551)
133	SLDU	O	Sled servo (U) drive signal output to the MPC17A55VF (IC551)
134	SLDV	O	Sled servo (V) drive signal output to the MPC17A55VF (IC551)
135	SLDW	O	Sled servo (W) drive signal output to the MPC17A55VF (IC551)
136	VDC5	—	Power supply terminal (+2V) (for internal logic)
137	VSC5	—	Ground terminal (for internal logic)
138	SLCU	I	Sled servo (U) timing signal input from the MPC17A55VF (IC551)
139	SLCV	I	Sled servo (V) timing signal input from the MPC17A55VF (IC551)
140	SLCW	I	Sled servo (W) timing signal input from the MPC17A55VF (IC551)
141	SLVS	O	Sled servo voltage control signal output to the MPC17A55VF (IC551)
142	BYPS	O	By-pass transistor control signal output terminal for the sled drive power supply
143	DVSS0	—	Ground terminal (for internal 16M bit D-RAM)

Pin No.	Pin Name	I/O	Description
144	DVDD0	—	Power supply terminal (+2.4V) (for internal 16M bit D-RAM)
145	DVSS1	—	Ground terminal (for internal 16M bit D-RAM)
146	DVDD1	—	Power supply terminal (+2.4V) (for internal 16M bit D-RAM)
147	TST8	I	Input terminal for the test Not used (open)
148 to168	NC	—	Not used (open)

• **MAIN BOARD IC801 RU6915MF-0001 (SYSTEM CONTROLLER)**

Pin No.	Pin Name	I/O	Description
1	THOLD	I	Two shaft device tracking coil-end voltage monitor input terminal (A/D input)
2	UREG MON	I	Un-regulator power supply voltage monitor input terminal (A/D input)
3	VC MON	I	VC (middle point voltage) power supply voltage monitor input terminal (A/D input)
4	VREF	I	Input terminal for power supply voltage adjustment reference voltage (+2V) (A/D input)
5	PLAY KEY	I	Not used (fixed at "H")
6	OPEN CLS SW	I	Upper panel open/close detect switch (S801) input terminal (A/D input) "L": upper panel close, "H": upper panel open
7	RMC KEY	I	Remote commander with headphone key input terminal (A/D input)
8	SET KEY	I	Set key input terminal (A/D input) S804 to S808 (■, ▶▶I /►, I◀◀, +/–VOLUME keys input)
9	$\overline{\text{XRESET}}$	I	System reset signal input from the MPC1830ADTB (IC901) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
10	AVDD	—	Power supply terminal (+2.4V) (for A/D converter)
11	AVSS	—	Ground terminal (for A/D converter)
12 to15	TYPE0 to TYPE3	I	Setting terminal for model discrimination (bit0 to bit3) Fixed at "L" in this set
16	XOUT	O	Main system clock output terminal (16.9344 MHz)
17	XIN	I	Main system clock input terminal (16.9344 MHz)
18	SXOUT	O	Sub system clock output terminal Not used (open)
19	SXIN	I	Sub system clock input terminal Not used (fixed at "L")
20	COUT	O	Not used (open)
21	VDD	—	Power supply terminal (+2V) (digital system)
22	VSS	—	Ground terminal (digital system)
23	HOLD SW	I	HOLD switch (S802) input terminal "L": hold off, "H": hold on
24	$\overline{\text{XRFSW}}$	O	Standby control signal output to the CXA2523ATQ (IC501) "L": standby
25, 26	NC	—	Not used (open)
27	SQSY	I	Subcode Q sync (SCOR) input from the CXD2663GA (IC601) "L" is input every 13.3 msec Almost all, "H" is input
28	XINT	I	Interrupt status input from the CXD2663GA (IC601)
29, 30	DBB0, DBB1	I	DIGITAL MEGABASS switch (S301) input terminal *1
31	OPR LED	O	OPERATE LED (D801) drive signal output terminal "H": LED on
32	NC	—	Not used (open)
33	ADJUST	I	Setting terminal for the test mode "L": test mode, Normally: fixed at "H"
34	RMC VCON	O	Remote commander power supply voltage select signal output to the DC/DC converter circuit
35	SBUS CLK	O	SBB serial clock signal output terminal Not used (open)
36	SBUS DATA	I/O	SBB serial data input/output terminal Not used (open)
37	LD ON	O	Laser diode on/off control signal output to the automatic power control circuit "L": laser off, "H": laser on
38	SLD 1 MON	I	Sled servo timing signal input from the MPC17A55VF (IC551)
39	SLD 2 MON	I	Sled servo timing signal input from the MPC17A55VF (IC551)
40	AVDD	—	Power supply terminal (analog system) Not used (open)
41	VPP	—	Test terminal (fixed at "L")
42	CLV VCON	O	Spindle servo drive voltage control signal output to the MPC17A55VF (IC551)
43	APC REF	O	Laser power control signal output terminal Not used (open)
44	V28 CON	O	Power supply voltage adjustment PWM signal output to the MPC1830ADTB (IC901)
45	CLV U MON	I	Spindle servo (U) timing signal input from the MPC17A55VF (IC551)

Pin No.	Pin Name	I/O	Description
46	CLV V MON	I	Spindle servo (V) timing signal input from the MPC17A55VF (IC551)
47	CLV W MON	I	Spindle servo (W) timing signal input from the MPC17A55VF (IC551)
48	CLV U CON	I	Spindle servo (U) drive signal input from the MPC17A55VF (IC551) Not used
49	CLV V CON	I	Spindle servo (V) drive signal input from the MPC17A55VF (IC551) Not used
50	CLV W CON	I	Spindle servo (W) drive signal input from the MPC17A55VF (IC551) Not used
51	AVLS SW	I	AVLS switch (S803) input terminal "L": LIMIT, "H": NORM
52	SENSE	I	Internal status (SENSE) input from the CXD2663GA (IC601)
53	NC	—	Not used (open)
54	MTFLGL	I	Muting applied to analog signal output in non-signal status causes the signal to be "H" automatically Not used
55	MTFLGR	I	Muting applied to analog signal output in non-signal status causes the signal to be "H" automatically Not used
56	MNT0	I	Signal indicating the speed follow-up spinning mode input from the CXD2663GA (IC601) "H": speed follow-up spinning mode
57	MNT1	I	Sled motor operation monitor signal input from the the CXD2663GA (IC601) "H": monitor drive
58	MNT2	I	Speed limiter signal input from the the CXD2663GA (IC601) "L": limiter on
59	MNT3	I	Window signal to detect an inverse trigger edge input from the the CXD2663GA (IC601) "H": edge detectable
60	BEEP	O	Beep sound drive signal output to the headphone amplifier (IC301)
61	VSS	—	Ground terminal (digital system)
62	SPCK	O	Not used (open)
63	RMC DTCK	I/O	TSB serial communication data input/output terminal for remote commander with headphone
64	SCLK	O	Serial clock signal output to the CXD2663GA (IC601)
65	SRDT	I	Reading data input from the CXD2663GA (IC601)
66	SWDT	O	Writing data output to the CXD2663GA (IC601)
67	XLAT	O	Serial data latch pulse output to the CXD2663GA (IC601)
68	SLEEP	O	System sleep control signal output to the MPC1830ADTB (IC901) "H": sleep on
69	$\overline{\text{XWK CLR}}$	O	Wauk up factor clear signl output to the MPC17A55VF (IC551) and MPC1830ADTB (IC901) "L" active
70	HP MUTE	O	Muting on/off control signal output to the headphone amplifier (IC301) "H": muting on
71	HP STBY	O	Standby on/off control signal output to the headphone amplifier (IC301) "L": standby mode, "H": amplifier on
72	NC	—	Not used (open)
73	NV DI	I	Serial data input from the EEPROM (IC802)
74	NV DO	O	Serial data output to the EEPROM (IC802)
75	NV CLK	O	Serial clock signal output to the EEPROM (IC802)
76	NV CS1	O	Chip select signal output to the EEPROM (IC802)
77, 78	NC	—	Not used (open)
79	VDD	—	Power supply terminal (+2V) (digital system)
80	VSS	—	Ground terminal (digital system)

*1 DIGITAL MEGABASS switch (S301)

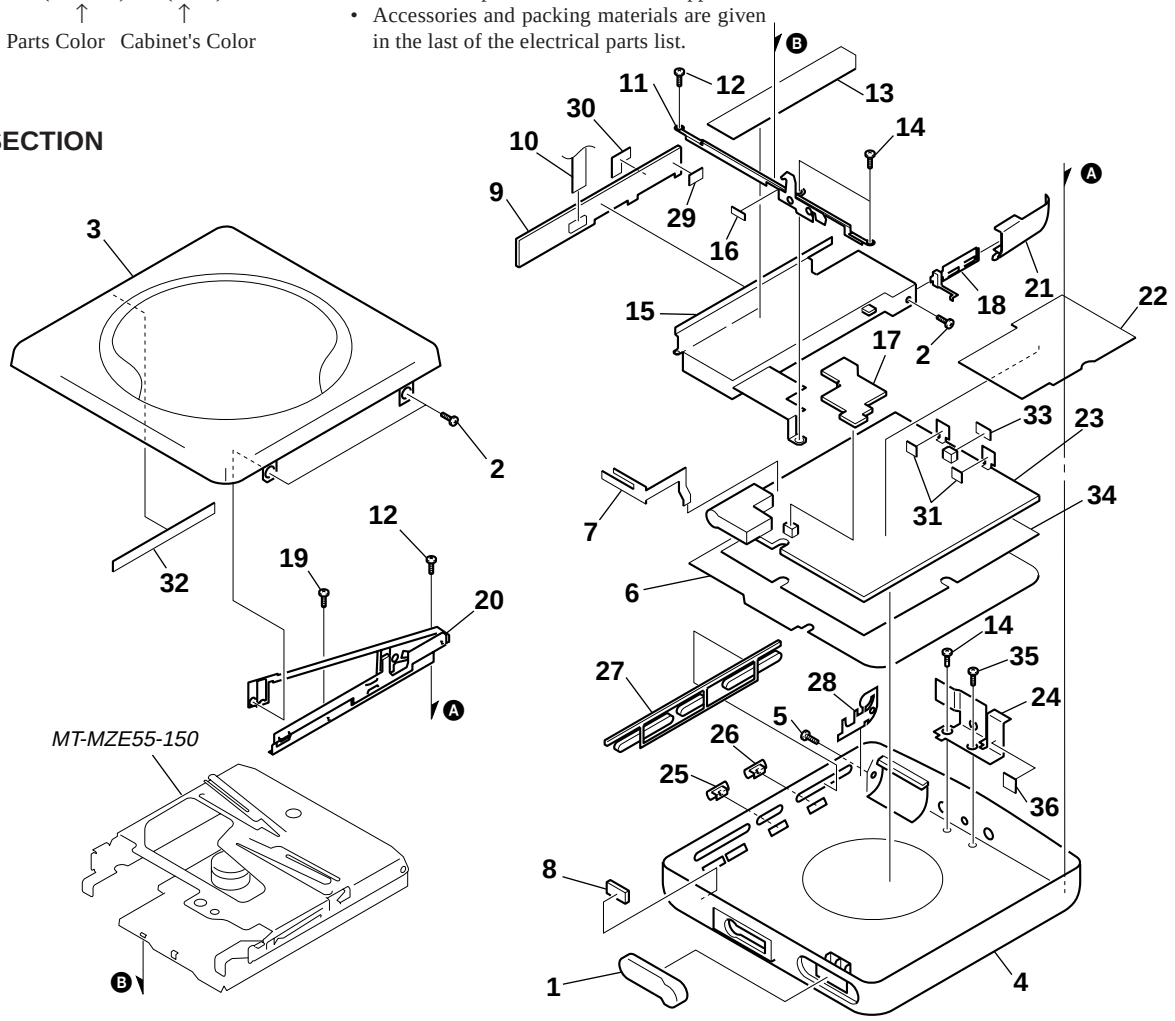
Terminal \ Switch	0 (OFF)	1 (MID)	2 (MAX)
DBB0 (pin ㉙)	"H"	"L"	"H"
DBB1 (pin ㉚)	"H"	"H"	"L"

SECTION 7
EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

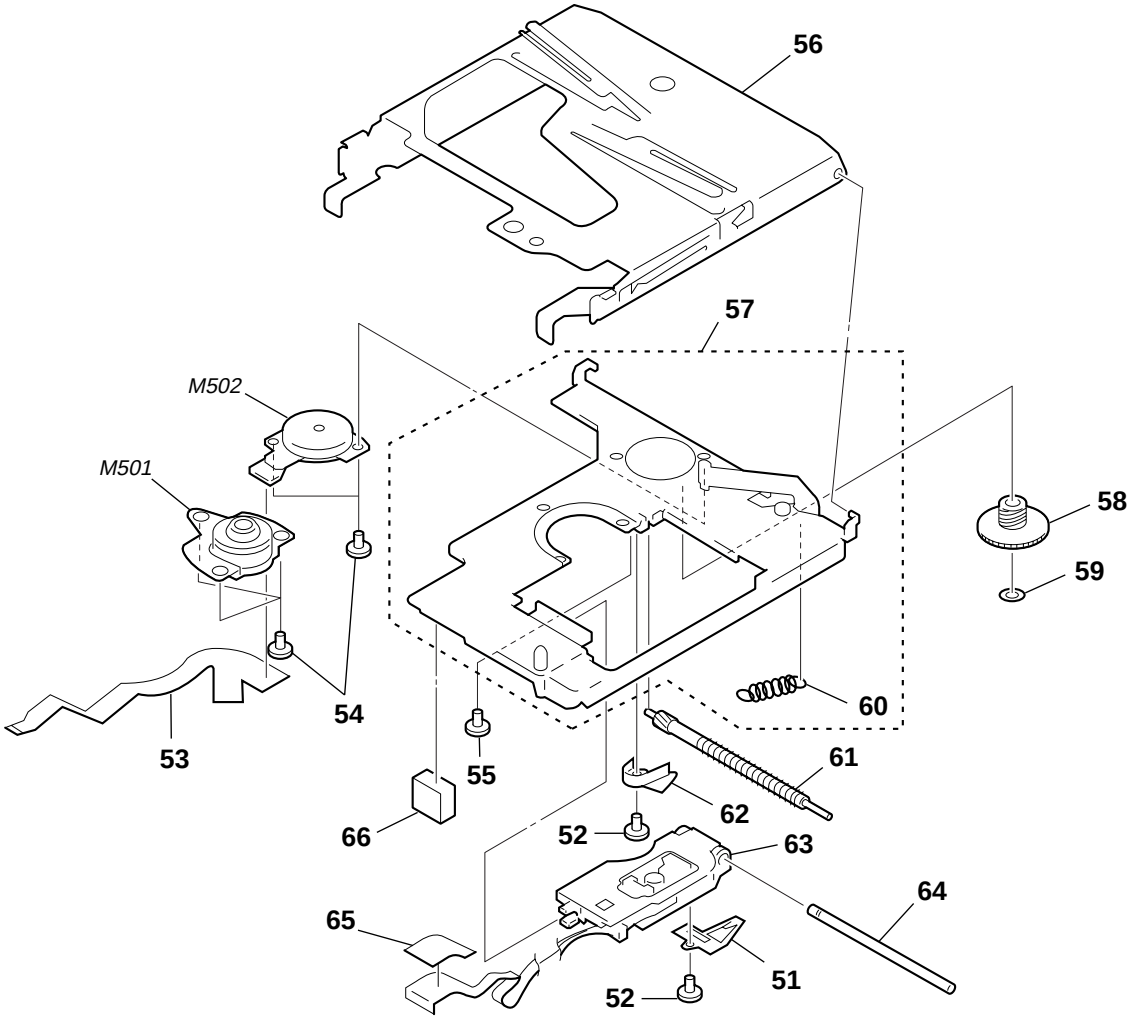
(1) MAIN SECTION



Ref. No.	Part No.	Description	Remark
1	4-219-842-01	KNOB, OPEN	
2	4-963-883-21	SCREW (M1.4), PRECISION PAN	
3	X-4951-977-1	LID ASSY (S), UPPER (SILVER)	
3	X-4951-978-1	LID ASSY (S), UPPER (BLUE)	
3	X-4951-979-1	LID ASSY (S), UPPER (BLACK)	
4	X-4951-974-1	PANEL ASSY (S), BOTTOM (SILVER)	
4	X-4951-975-1	PANEL ASSY (S), BOTTOM (BLUE)	
4	X-4951-976-1	PANEL ASSY (S), BOTTOM (BLACK)	
5	3-349-825-21	SCREW	
6	4-223-224-01	SHEET (PANEL) (BLUE)	
6	4-223-224-11	SHEET (PANEL) (SILVER)	
6	4-223-224-21	SHEET (PANEL) (BLACK)	
7	4-212-895-01	TERMINAL BOARD (MINUS)	
8	4-214-158-01	DAMPER (-)	
9	A-3322-066-A	SW BOARD, COMPLETE	
10	1-674-262-11	SWITCH FLEXIBLE BOARD	
11	X-4951-549-1	SLIDER ASSY, OPEN	
12	3-015-033-01	SCREW (B1.4X3), TAPPING	
13	4-213-092-01	LABEL, CAUTION	
14	3-895-823-01	SCREW (B1.4X2.3), TAPPING	
15	4-219-834-01	CASE, BATTERY	
16	4-223-757-01	SHEET (SLIDER)	
17	A-3322-068-A	AUDIO BOARD, COMPLETE	
18	X-4950-411-1	TERMINAL (PLUS) ASSY, BATTERY	

Ref. No.	Part No.	Description	Remark
19	4-222-800-01	SCREW (1.4X2)	
20	X-4951-548-1	PLATE (R) ASSY, FULCRUM	
21	4-219-833-01	LID, BATTERY CASE (BLUE)	
21	4-219-833-11	LID, BATTERY CASE (SILVER)	
21	4-219-833-21	LID, BATTERY CASE (BLACK)	
22	4-212-871-01	SHEET, BLIND	
23	A-3323-244-A	MAIN BOARD, COMPLETE	
24	4-219-843-01	BRACKET (CASE)	
25	4-219-840-01	KNOB (MB) (BLUE)	
25	4-219-840-11	KNOB (MB) (SILVER)	
25	4-219-840-21	KNOB (MB) (BLACK)	
26	4-219-836-01	KNOB (AVLS) (BLUE)	
26	4-219-836-11	KNOB (AVLS) (SILVER)	
26	4-219-836-21	KNOB (AVLS) (BLACK)	
27	4-219-835-01	BUTTON, CONTROL	
28	X-4951-964-1	PLATE (L) ASSY, FULCRUM	
29	4-223-563-01	SHEET (CHASSIS)	
30	4-223-564-01	SHEET (CONTROL), CONDUCTIVE	
31	4-223-223-01	SHEET (TERMINAL)	
32	4-223-221-01	SHEET (BRACKET)	
33	4-223-756-01	SHEET (OPEN)	
34	4-223-222-01	SHEET, CONDUCTIVE	
35	3-890-155-01	PAN (DIA. 1.4)	
36	4-224-063-01	SHEET	

(2) MECHANISM DECK SECTION (MT-MZE55-150)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
51	4-982-561-11	SPRING, RACK	
52	4-963-883-61	SCREW (M1.4), PRECISION PAN	
53	1-670-707-11	CLV FLEXIBLE BOARD	
54	4-963-883-21	SCREW (M1.4), PRECISION PAN	
55	3-349-825-82	SCREW, PRECISION	
56	4-212-896-01	HOLDER	
57	X-4950-414-1	CHASSIS ASSY	
58	4-982-555-01	GEAR (A)	
59	4-965-893-01	WASHER, GEAR (A) STOPPER	
60	4-986-811-01	SPRING (EJECT), TENSION	
61	X-4948-793-1	LEAD ASSY	
62	4-212-899-01	SPRING, THRUST	
⚠63	X-4949-164-1	OPTICAL PICK-UP ASSY (ODX-1B)	
64	4-214-478-01	SHAFT, MAIN	
65	4-214-207-01	SHEET (OP)	
66	4-222-799-01	SPACER (OP FLEXIBLE)	
M501	8-835-594-02	MOTOR, DC SSM-01C03A/C-N (SPINDLE)	
M502	1-698-764-21	MOTOR, SLED (SLED)	

SECTION 8
ELECTRICAL PARTS LIST

AUDIO **MAIN**

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-3322-068-A	AUDIO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C102	1-125-899-11	TANTALUM CHIP	220uF	20%	4V
C103	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C202	1-125-899-11	TANTALUM CHIP	220uF	20%	4V
C203	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C301	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C302	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C303	1-135-259-11	TANTALUM CHIP	10uF	20%	6.3V
C304	1-109-935-11	TANTALUM CHIP	4.7uF	20%	6.3V
C305	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C306	1-135-259-11	TANTALUM CHIP	10uF	20%	6.3V
		< CONNECTOR >			
* CN302	1-750-281-31	CONNECTOR, BOARD TO BOARD 10P			
		< IC >			
IC301	8-759-598-15	IC TA2131FL (EL)			
		< TRANSISTOR >			
Q301	8-729-037-52	TRANSISTOR 2SD2216J-QR (TX).SO			
		< RESISTOR >			
R103	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R105	1-216-835-11	METAL CHIP	15K	5%	1/16W
R106	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R107	1-216-797-11	METAL CHIP	10	5%	1/16W
R203	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R205	1-216-835-11	METAL CHIP	15K	5%	1/16W
R206	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R207	1-216-797-11	METAL CHIP	10	5%	1/16W
R301	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R302	1-216-849-11	METAL CHIP	220K	5%	1/16W
R305	1-216-803-11	METAL CHIP	33	5%	1/16W
**********					
	A-3323-244-A	MAIN BOARD, COMPLETE			
		**********			
	4-219-844-01	TERMINAL			

Ref. No.	Part No.	Description			Remark
		< CAPACITOR >			
C101	1-109-935-11	TANTALUM CHIP	4.7uF	20%	6.3V
C104	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C201	1-109-935-11	TANTALUM CHIP	4.7uF	20%	6.3V
C204	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C308	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C501	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C502	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C503	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C504	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C505	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C506	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C507	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C508	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C509	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C510	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C511	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C512	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C513	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C514	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C515	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C516	1-127-569-11	TANTALUM CHIP	100uF	20%	4V
C518	1-127-569-11	TANTALUM CHIP	100uF	20%	4V
C519	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C520	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C521	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C522	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C524	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C525	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C526	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C527	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C528	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C529	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C551	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C552	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C553	1-135-238-21	TANTALUM CHIP	6.8uF	20%	10V
C554	1-135-238-21	TANTALUM CHIP	6.8uF	20%	10V
C555	1-107-765-11	TANTALUM CHIP	3.3uF	20%	16V
C556	1-107-765-11	TANTALUM CHIP	3.3uF	20%	16V
C557	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C558	1-127-895-11	TANTALUM CHIP	22uF	20%	4V
C559	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C560	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V

MAIN

Ref. No.	Part No.	Description			Remark
C561	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C562	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C563	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C564	1-127-569-11	TANTALUM CHIP	100uF	20%	4V
C565	1-135-259-11	TANTALUM CHIP	10uF	20%	6.3V
C568	1-127-760-11	CAPACITOR	4.7uF	10%	6.3V
C569	1-127-760-11	CAPACITOR	4.7uF	10%	6.3V
C570	1-127-760-11	CAPACITOR	4.7uF	10%	6.3V
C572	1-127-760-11	CAPACITOR	4.7uF	10%	6.3V
C573	1-127-760-11	CAPACITOR	4.7uF	10%	6.3V
C574	1-127-760-11	CAPACITOR	4.7uF	10%	6.3V
C603	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C604	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C605	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C606	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C607	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C608	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C609	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C610	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C611	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C612	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C614	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C615	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C617	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C618	1-115-156-11	CERAMIC CHIP	1uF		10V
C619	1-115-156-11	CERAMIC CHIP	1uF		10V
C620	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C621	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C801	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C803	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C804	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C805	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C807	1-115-156-11	CERAMIC CHIP	1uF		10V
C808	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C809	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C813	1-117-232-11	TANTALUM CHIP	22uF	20%	4V
C831	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C832	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C833	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C834	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C901	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C902	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C903	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C904	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C905	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C906	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C907	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C908	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C910	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C911	1-135-259-11	TANTALUM CHIP	10uF	20%	6.3V
C912	1-135-259-11	TANTALUM CHIP	10uF	20%	6.3V
C918	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C919	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C920	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
* CN301	1-750-316-31	CONNECTOR, BOARD TO BOARD 10P			
* CN501	1-778-168-11	CONNECTOR, FFC/FPC (ZIF) 20P			
* CN551	1-793-124-21	CONNECTOR, FPC (ZIP) 8P			
* CN801	1-793-327-21	CONNECTOR, FPC			
		< DIODE >			
D151	8-719-017-58	DIODE MA8068			
D251	8-719-017-58	DIODE MA8068			
D351	8-719-017-58	DIODE MA8068			
D841	8-719-066-17	DIODE FTZ6.8E-T148			
D901	8-719-420-51	DIODE MA729			
D902	8-719-066-16	DIODE RB491D-T146			
D903	8-719-420-51	DIODE MA729			
		< FERRITE BEAD >			
FB602	1-414-227-11	FERRITE BEAD INDUCTOR CHIP			0uH
FB841	1-414-228-11	FERRITE BEAD INDUCTOR CHIP			0uH
FB842	1-414-228-11	FERRITE BEAD INDUCTOR CHIP			0uH
		< IC >			
IC501	8-752-093-82	IC CXA2523ATQ-T4			
IC502	8-759-581-57	IC MAX4330EUK-TG069			
IC503	8-759-599-61	IC XC62FP2202MR			
IC504	8-759-488-26	IC XC62FP2002MR			
IC551	8-759-390-25	IC MPC17A55FTA			
IC552	8-759-358-40	IC TLC372CPW-E20			
⊿IC601	————	IC CXD2663GA			
IC801	8-759-596-10	IC RU6915MF-0001			
IC802	8-759-449-23	IC AK93C55AV-L			
IC901	8-759-538-57	IC MPC1830ADTB			
IC902	8-759-599-62	IC XC6383C281MR			
		< JACK >			
J301	1-779-867-61	JACK (🎧 REMOTE)			
		< COIL >			
L501	1-412-006-31	INDUCTOR CHIP 10uH			
L551	1-412-031-11	INDUCTOR CHIP 47uH			
L552	1-412-031-11	INDUCTOR CHIP 47uH			
L553	1-412-030-11	INDUCTOR CHIP 22uH			
L554	1-412-030-11	INDUCTOR CHIP 22uH			
L555	1-412-030-11	INDUCTOR CHIP 22uH			
L556	1-414-410-21	SMALL TYPE INDUCTOR (SMD TYPE) 10uH			
L901	1-412-032-11	INDUCTOR CHIP 100uH			
L902	1-419-131-21	COIL, CHOKE 15uH			
L903	1-414-410-21	SMALL TYPE INDUCTOR (SMD TYPE) 10uH			
L904	1-414-406-41	INDUCTOR (SMD) 220uH			
		< TRANSISTOR >			
Q501	8-729-049-81	FET SSM3K01F-TE85L			
Q502	8-729-046-90	TRANSISTOR 2SB970- (TX).S0			
Q503	8-729-425-46	TRANSISTOR XP4315-TXE			
Q551	8-729-904-87	TRANSISTOR 2SB1197K-R			
Q552	8-729-929-11	TRANSISTOR DTC143ZE-TL			
Q901	8-729-049-81	FET SSM3K01F-TE85L			
Q902	8-729-049-81	FET SSM3K01F-TE85L			
Q903	8-729-929-11	TRANSISTOR DTC143ZE-TL			

⊿ Replacement of CXD2663GA (IC601) used in this set requires a special tool. Therefore, it cannot be replaced.

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R101	1-216-819-11	METAL CHIP	680	5%	1/16W
R201	1-216-819-11	METAL CHIP	680	5%	1/16W
R501	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R502	1-216-859-11	RES, CHIP	1.5M	5%	1/16W
R503	1-216-853-11	METAL CHIP	470K	5%	1/16W
R504	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R505	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R506	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R507	1-216-835-11	METAL CHIP	15K	5%	1/16W
R508	1-216-835-11	METAL CHIP	15K	5%	1/16W
R509	1-216-845-11	METAL CHIP	100K	5%	1/16W
R510	1-216-843-11	METAL CHIP	68K	5%	1/16W
R511	1-216-833-11	RES, CHIP	10K	5%	1/16W
R512	1-216-843-11	METAL CHIP	68K	5%	1/16W
R513	1-216-864-11	METAL CHIP	0	5%	1/16W
R514	1-216-864-11	METAL CHIP	0	5%	1/16W
R515	1-216-821-11	METAL CHIP	1K	5%	1/16W
R517	1-216-811-11	METAL CHIP	150	5%	1/16W
R518	1-218-446-11	METAL CHIP	1	5%	1/16W
R519	1-216-857-11	METAL CHIP	1M	5%	1/16W
R521	1-216-833-11	RES, CHIP	10K	5%	1/16W
R522	1-216-857-11	METAL CHIP	1M	5%	1/16W
R523	1-216-821-11	METAL CHIP	1K	5%	1/16W
R524	1-216-833-11	RES, CHIP	10K	5%	1/16W
R525	1-216-833-11	RES, CHIP	10K	5%	1/16W
R526	1-216-833-11	RES, CHIP	10K	5%	1/16W
R553	1-216-833-11	RES, CHIP	10K	5%	1/16W
R554	1-216-833-11	RES, CHIP	10K	5%	1/16W
R555	1-216-809-11	METAL CHIP	100	5%	1/16W
R556	1-216-853-11	METAL CHIP	470K	5%	1/16W
R602	1-216-821-11	METAL CHIP	1K	5%	1/16W
R604	1-216-841-11	METAL CHIP	47K	5%	1/16W
R605	1-216-833-11	RES, CHIP	10K	5%	1/16W
R606	1-216-845-11	METAL CHIP	100K	5%	1/16W
R607	1-216-855-11	METAL CHIP	680K	5%	1/16W
R610	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R611	1-216-857-11	METAL CHIP	1M	5%	1/16W
R612	1-216-811-11	METAL CHIP	150	5%	1/16W
R613	1-216-821-11	METAL CHIP	1K	5%	1/16W
R614	1-216-821-11	METAL CHIP	1K	5%	1/16W
R615	1-216-803-11	METAL CHIP	33	5%	1/16W
R616	1-216-864-11	METAL CHIP	0	5%	1/16W
R617	1-216-803-11	METAL CHIP	33	5%	1/16W
R618	1-216-864-11	METAL CHIP	0	5%	1/16W
R620	1-216-864-11	METAL CHIP	0	5%	1/16W
R801	1-216-845-11	METAL CHIP	100K	5%	1/16W
R802	1-216-845-11	METAL CHIP	100K	5%	1/16W
R803	1-216-853-11	METAL CHIP	470K	5%	1/16W
R804	1-216-833-11	RES, CHIP	10K	5%	1/16W
R805	1-216-853-11	METAL CHIP	470K	5%	1/16W
R806	1-218-895-11	RES, CHIP	100K	0.5%	1/16W
R807	1-218-895-11	RES, CHIP	100K	0.5%	1/16W
R808	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R811	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R812	1-216-841-11	METAL CHIP	47K	5%	1/16W
R813	1-216-833-11	METAL CHIP	10K	5%	1/16W
R819	1-216-853-11	METAL CHIP	470K	5%	1/16W
R821	1-216-857-11	METAL CHIP	1M	5%	1/16W
R841	1-216-809-11	METAL CHIP	100	5%	1/16W
R842	1-216-809-11	METAL CHIP	100	5%	1/16W
R901	1-216-845-11	METAL CHIP	100K	5%	1/16W
R902	1-216-849-11	METAL CHIP	220K	5%	1/16W
R903	1-216-863-11	RES, CHIP	3.3M	5%	1/16W
R904	1-216-845-11	METAL CHIP	100K	5%	1/16W
R905	1-216-857-11	METAL CHIP	1M	5%	1/16W
R909	1-216-847-11	METAL CHIP	150K	5%	1/16W
R910	1-218-871-11	RES, CHIP	10K	0.5%	1/16W
R911	1-216-833-11	RES, CHIP	10K	5%	1/16W
R912	1-216-864-11	METAL CHIP	0	5%	1/16W
R913	1-216-819-11	METAL CHIP	680	5%	1/16W
R914	1-216-857-11	METAL CHIP	1M	5%	1/16W
R915	1-216-857-11	METAL CHIP	1M	5%	1/16W
R916	1-216-859-11	RES, CHIP	1.5M	5%	1/16W
R918	1-216-845-11	METAL CHIP	100K	5%	1/16W
		< COMPOSITION CIRCUIT BLOCK >			
RB551	1-233-961-11	RES, NETWORK (CHIP TYPE) 1K			
RB552	1-233-979-11	RES, NETWORK (CHIP TYPE) 1M			
RB601	1-233-981-21	RES, NETWORK (CHIP TYPE) 0			
RB801	1-233-977-11	RES, NETWORK (CHIP TYPE) 470K			
RB802	1-233-969-11	RES, NETWORK (CHIP TYPE) 22K			
RB803	1-233-973-11	RES, NETWORK (CHIP TYPE) 100K			
		< VIBRATOR >			
X601	1-781-556-21	VIBRATOR, CRYSTAL (22.5792MHz)			
X801	1-767-621-11	VIBRATOR, CERAMIC (16.9344MHz)			
**********					
	A-3322-066-A	SW BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
* CN802	1-793-328-21	CONNECTOR, FPC			
		< LED >			
D801	8-719-061-82	LED TLSU1002 (TPX1, SONY) (OPERATE)			
		< RESISTOR >			
R814	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R815	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R816	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R817	1-216-835-11	METAL CHIP	15K	5%	1/16W
R818	1-216-839-11	METAL CHIP	33K	5%	1/16W
		< SWITCH >			
S301	1-762-079-11	SWITCH, SLIDE (DIGITAL MEGABASS)			
S801	1-771-483-21	SWITCH, PUSH (1KEY) (OPEN/CLOSE)			
S802	1-572-922-11	SWITCH, SLIDE (HOLD)			
S803	1-762-078-11	SWITCH, SLIDE (AVLS)			
**********					

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
10	1-674-262-11	SWITCH FLEXIBLE BOARD	
53	1-670-707-11	CLV FLEXIBLE BOARD	
⚠63	X-4949-164-1	OPTICAL PICK-UP ASSY (ODX-1B)	
M501	8-835-594-02	MOTOR, DC SSM-01C03A/C-N (SPINDLE)	
M502	1-698-764-21	MOTOR, SLED (SLED)	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-418-493-11	REMOTE CONTROL UNIT (RM-MZE1)	
⚠	1-528-580-21	BATTERY CHARGER (BC-7HT) (Tourist)	
	1-528-842-11	BATTERY, NICKEL HYDROGEN	
⚠	1-528-866-11	BATTERY CHARGER (BC-9HP2) (Hong Kong)	
⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (Tourist)	
	1-759-628-21	CASE, BATTERY	
	3-008-521-21	CASE, BATTERY CHARGE	
	3-867-258-11	MANUAL, INSTRUCTION (JAPANESE, KOREAN) (Tourist)	
	3-867-258-21	MANUAL, INSTRUCTION (ENGLISH, CHINESE)	
	3-867-258-31	MANUAL, INSTRUCTION (FRENCH, SPANISH) (Tourist)	
	4-221-117-01	CASE, CARRYING	
	4-221-753-01	STRAP, HAND (BLUE)	
	4-221-753-11	STRAP, HAND (SILVER)	
	4-221-753-21	STRAP, HAND (BLACK)	
	8-953-304-90	HEADPHONE MDR-E805SP	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

99G0526-1
Printed in Japan © 1999. 7
Published by General Engineering Dept.